1965

Factors Related to Scholastic Achievement (Louisiana State University's 1963--1964 Freshman Class).

Joe Watkins Campbell
Louisiana State University and Agricultural & Mechanical College

FACTORS RELATED TO SCHOLASTIC ACHIEVEMENT (LOUISIANA STATE UNIVERSITY'S 1963-1964 FRESHMAN CLASS)

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Education

in

The College of Education

by
Joe W. Campbell
B.A., Louisiana College, 1943
M.Ed., Louisiana State University, 1949
August, 1965

ACKNOWLEDGMENT

The writer wishes to acknowledge his indebtedness to his Major Professor, Dr. George H. Deer, Dean of the Junior Division, Louisiana State University, for his guidance during the progress of this study; to the members of his Graduate Committee, Dr. Sam Adams, Dr. Irwin A. Berg, Dr. Rodney P. Cline, Dr. William R. Eglin, Dr. Thomas R. Landry, and Dr. Donald E. Shipp, for their assistance and encouragement; to the staff of The Computer Research Center, Louisiana State University; to the Office of the Registrar, Louisiana State University; and to the Office Staff of the Junior Division, Louisiana State University. Without the assistance of each of the above this study could not have been completed.

TABLE OF CONTENTS

PAGE

PAGE

PAGE

PAGE

PAGE

LIST OF TABLES

PAGE

PAGE

PAGE

ABSTRACT

Statement of the problem. The purpose of this study was to identify factors significantly related to the academic achievement of Louisiana State University's 1963-64 freshman class.

Sources of data. Data for this study came from the student's high school transcript, his personal data sheet, the student's personal folder, scores of placement tests, and college grades. All are on file in either the Office of the Registrar or the Junior Division at Louisiana State University.

Procedure. Three approaches to the problem were used. First, five broad categories of achievement were set-up based on the student's academic standing at the end of his second semester:

Category I. Those eligible to enter a senior college

Category II. Those eligible to continue in the Junior Division without being on scholastic probation

Category III. Those eligible to continue in the Junior Division but on scholastic probation

Category IV. Those dropped at the end of the second semester for academic deficiency

Category V. Those that had been dropped at the end of the first semester for academic deficiency.

As a second approach, simple correlations were computed between college grade-point averages and selected factors. And as a third approach, the relationship was determined between each of the factors studied and the student's indicated preference for a senior college.

The number and the percentage of students were tabulated for the respective categories and each of the selected factors, and the X^2 statistical treatment applied to determine the significance of the relationship at the .05 level of confidence.

The findings. A significant relationship was found, at the .01 level, between scholastic achievement and each of the factors considered in the study, except that of class size which was significant at the .05 level. The relationships between first-year college achievement and the various factors are indicated here:

1. Sex. Achievement of women students tended to be higher than that of men.

2. High-school course background. Those with four units of high-school English achieved significantly higher in college, as did those with three or more academic credits in high-school mathematics or science. On the contrary, there was a reverse relationship between college achievement and the number of vocational courses taken in high school.
3. High-school grade-point average. Those with "B" or better averages achieved significantly higher than those with "C" averages. Students with a "D" average on high-school work had about a 50-50 chance of success in college. Quartile rank in the high-school graduating class was consistent with results found using high-school grade-point averages.
4. Class size. Students from classes of 200-399 had the greatest percentage of successful achievement.
5. Formal education of parent. Those whose parent achieved college success tended to attain higher achievement levels.
6. Placement test scores. Those with higher scores achieved significantly higher in college.

Coefficients of correlation. The coefficient of correlation was .501 between college grade-point average and high-school grade-point average; .411 between college grade-point average and the scores on the Cooperative Mathematics Test; .253 between college grade-point average and School and College Abilities Test scores; and .253 between college grade-point average and scores on the Cooperative English Test.

The student's expressed preference for a senior college. A significant relationship, at the .01 level, was found between the student's expressed preference for a senior college and each of the selected factors, however, the patterns were too varied to draw valid conclusions.

CHAPTER I

THE PROBLEM AND PROCEDURES TO BE USED

I. THE PROBLEM

Statement of the problem. The purpose of this study was to identify factors significantly related to the academic achievement of college freshmen at Louisiana State University.

Importance of the study. The increase in the number of students applying for admission to college poses a real problem for colleges and universities, for people who must provide the financial support, and for the secondary school administrators and counselors who must assist pupils and/or their parents in their decisions about college attendance. There is also the question of "who should attend college?".

In Louisiana any graduate of a state approved high school is eligible for admission to the State University. This calls for intelligent counseling of high school students. Such counsel must be cognizant of the factors that have a relationship to college achievement and must evaluate them in terms of the desires, needs, and academic ability of the individual student. Information about the factors

related to college achievement may help the high school graduate assess his own chances of college success.

This study provides information for counselors and administrators in high school and college as they help students make decisions about college entrance. It points up problems inherent in limiting college enrollment by specific entrance requirements.

Limitations. The study includes all members of the freshman class entering Louisiana State University for the 1963 fall term, 2775 subjects for whom data were available. In some instances data for a particular factor were not available for all students. In such areas only those students were included for whom data were available.

II. PROCEDURES USED

Sources of data. The high school transcripts on file in the Registrar's Office at Louisiana State University were examined for all members of the 1963 freshman class. Data were recorded according to a pre-set code then transferred to IBM data sheets. More than 3000 sets of such data were punched into data processing cards. The student's personal folder on file in the office of the Junior Division was another data source.

The two sets of data were verified through use of student rosters, an alphabetized listing of all students

in the Junior Division in the fall of 1963, and a numerically ascending student number roster of all students attending the University. The student number punched into each data card allowed the two sets of data to be matched and repunched into a single card. Usable data were available for 2775 subjects out of the total of 2925 freshmen in the class. Thus 94.8 per cent of the total enrollment are included.

Procedure. This study was made possible through the facilities and co-operation of the University's Computer Research Center. All data punching, programming, and most of the statistical computations were done by this center.

Three approaches were used in the study. (1) A simple correlation between college grade-point averages and certain factors was used to provide discrimination of achievement as well as to see the significance of the coefficient of correlation found between college achievement and the respective factors. (2) A broader range of achievement, arranging the students into five categories was then used to compare the various factors in the freshman's high school and personal background with his college achievement. (3) A third approach was to determine the relation of these to the student's preference for a senior college stated at

the time of his original registration.

Chapter II provides a review of the literature and is followed by a chapter devoted to each of the three approaches indicated above. Chapter III presents the correlation of certain factors with the student's college grade-point average.

> All freshmen at LSU enroll in the Junior Division, which concerns itself primarily with the problems of first-year students--their courses of study, and their guidance during the period of transition from high school to college. The freshman year in the Junior Division and the following three years in one of the degree colleges represent the normal time required for completion of any of the baccalaureate degree programs.[1]
>
> For unconditional admission to the senior college from the Junior Division the student must earn 30 or more semester hours of credit with an overall C average.[2]
>
> The student who does not meet this requirement for admission to the senior college within the normal two semesters may continue in the Junior Division under varying categories of academic status depending on his level of achievement. To continue even under probation he is required to meet specified requirements during each semester of attendance. Failure to meet these may cause him to be dropped for one semester and eventually dropped from the University.[3]

---

[1] Introducing LSU (Baton Rouge: Registrar's Office, Louisiana State University, 1964), p. 5.

[2] Louisiana State University General Catalogue, p. 72.

[3] Ibid., p. 75.

If it may be assumed that the goal for all entering freshmen is to graduate from the University, one indicator of achievement would be his progress toward that goal. The five categories of achievement used here are based on such progress, stated in terms of the student's scholastic status--good standing, probationary standing or failure--at the end of the second semester, June, 1964, the normal time for his advancement to a senior college if making satisfactory progress:

Category I. Those eligible to enter a senior college at that time (normal satisfactory progress)

Category II. Those not eligible to enter a senior college but eligible to continue in the Junior Division without being on scholastic probation

Category III. Those eligible to continue in the Junior Division, but on scholastic probation

Category IV. Those dropped at the end of or during second semester because of academic deficiency

Category V. Those already dropped at the end of or during first semester because of academic deficiency (6-6 rule)

Category Zero. Those dropped for various reasons but without grades, and so not included in one of above categories (category used in order to account for total group).

The relationship of achievement as measured by these categories, and the factor used in the study are presented in Chapter IV.

Louisiana State University has several senior colleges into which a student who successfully completes his program in the Junior Division may enter. The student indicates on his personal folder his preference for a senior college. This early choice may not be the college finally entered; but what a high school graduate wishes to do in relation to his ability together with his high school and family background should reflect whether his choices have been realistic. The significance of the relationship of the factors to this preference are explored in Chapter V. Chapter VI presents the summary and conclusions.

Tables are presented showing the number and percentages of students in the various categories in relation to the factors chosen for study. The chi square statistical treatment is used to indicate significance of differences in the relationships, with the null hypothesis rejected at the .05 level of confidence.

CHAPTER II

REVIEW OF THE LITERATURE

More and more parents and students expect the high school graduate to go on to college. The Dean of Louisiana State University's Junior Division states that:

> . . . All the 3900 young products of the post-war baby boom now enrolled as LSU freshmen aren't on the campus merely because they happen to have been born in the mid-1940's.
>
> Population increase alone cannot account for all the enrollment increases on college campuses today. Economic and sociological changes since World War II rival the population explosion as major factors in bringing LSU's current bumper crop of freshmen to the doors of the University.[1]

President Johnson, referring to his faith that the great society can be achieved, asked Congress to provide funds for higher education, declaring that:

> Advanced education is no longer a luxury to be enjoyed by children of fortunate families, but has become a necessity. And it is the right of every American boy and girl.[2]

A million and a quarter freshmen were enrolled in the nation's colleges and universities in the 1964-65

---

[1]Feature Story in the Baton Rouge Morning Advocate, October 18, 1964, p. 14-A.

[2]Johnson, Lyndon B., "Message to Congress," Phi Delta Kappan, 46:210, January, 1965.

session, a 20 per cent increase over the previous year.[3] This upsurge is creating problems in financing higher education and causing taxpayers through their legislative bodies sometimes to question their ability to provide college education to all who come. These problems are not of recent origin.

From the first establishment of colleges in this country various methods have been employed to identify those applicants thought to be most promising. Until the early eighteen-seventies the method uniformly employed was that of the entrance examination. This was followed by the accrediting system, especially for state-supported institutions. It had long been believed by many that the study of certain high-school subjects constituted a superior preparation for college. Completion of these required subjects in an accredited school allowed college entrance without examination. More recently there has been a tendency to qualify the acceptance of high-school credits towards college entrance upon the basis of marks received.[4]

Douglass criticizes the prescribed curriculum demanded at that time for college admission:

---

[3]Baton Rouge Morning Advocate, op. cit., p. 14-A.

[4]Harl R. Douglass, The Relation of High School Preparation and Certain Other Factors to Academic Success at the University of Oregon (Eugene: University Press, 1931), pp. 5-7.

> Until recently, there was no body of scientific data to support the practices employed. Such practices were the outcome of empirical and deductive methods often based upon questionable psychological premises. . . . Reinforced by tradition and inertia, these beliefs have operated to determine in large part the pattern of high-school subjects required for college entrance.[5]

This points up some of the efforts made to select those who could achieve college success. Douglass concludes from his study:

> After examination of the data of this and similar studies, one feels certain that twenty years from now our present practice of selecting college entrants on the basis of the pattern of subjects pursued in high school will seem a curious and inexplicable anomaly.[6]

Some schools and colleges have put the findings of Douglass, and others who agree with him, into an action program. The eight year study of the Progressive Education Association provided one answer to the question "Did they succeed in College?". This study of 1475 college students who had been admitted, practically speaking, on the mere recommendation of principals and head masters with no reference to unit pattern or unit content, showed that such students did succeed:

> These graduates of progressive schools have not set the colleges on fire, . . . On the other hand, they unmistakably made good--and then some.

---

[5] Ibid., p. 7.

[6] Ibid., p. 57.

> . . . According to the commonly used criteria of success in college, including grades and scholastic honors and participation and success in extra curricula activities, the progressive school graduates as a group came out a little ahead of a comparison group composed of traditionally trained students of closely similar scholastic aptitude and social and economic background.[7]

The problem of grade-point averages and their significance is discussed in the view of rather free selection of units of study. The Chamberlins report that it is difficult to make sense of grades because of the great variety of courses similar in name but different in content.

> In high school as well as in college, grades too frequently represent a student's ability to memorize and his willingness to conform to academic demands, which may or may not enlist his approval or interest.[8]

In light of such findings it was reported that colleges were modifying their statements on entrance requirements, some drastically and some with patterns less changed were becoming more flexible in the interpretation and administration. One study reported that any student who completed graduation requirements of any reputable high school, who had a satisfactory scholastic aptitude, and who had the definite recommendation of his principal could

---

[7]Dean Chamberlin, E. S. Chamberlin, et al., Did They Suceed in College? (New York: Harper and Brothers, 1942), pp. 20-21.

[8]Ibid., p. 25.

gain admission to any college in the land.[9]

The impact of the G. I. Bill following World War II brought millions of men to college campuses all over the land. Men were admitted from all walks of life but with new desire for a college education. For various reasons, many who would have been poor risks at an earlier date achieved college degrees. It is likely that entrance requirements were waived in many cases. In the introduction to his comprehensive study of the admission requirements of 650 colleges Fine holds that there is high probability that opportunity for higher education for all will become a reality.[10]

However present practices present a completely different picture.

> . . . College gates are barred by artificial or arbitrary restrictions, by the rigid guardians of tradition, or by a host of outmoded shibboleths.
>
> Colleges and univiersities report that they are not so much concerned with subjects as with proven scholarship achievement, and a trend toward a less rigid and more flexible program is evident. . . . (This) does not hold up under careful analysis; most colleges still require fifteen Carnegie Units of high school work. Moreover, these fifteen units are expected to cover certain

---

[9] Ibid., p. 25.

[10] Benjamin Fine, Admission to American Colleges, A Study of Current Policy and Practice (New York: Harper and Brothers, 1946), p. 8.

> specified areas . . . English, mathematics, foreign languages, natural sciences, and social sciences with ten units specified.[11]

Fine's study reports other findings. Recommendations of the principal merely help swing the balance in the applicant's favor in doubtful cases. Vocational or commercial courses are emphatically rejected by colleges as substitutes for traditional preparatory subjects. Ninety per cent of the colleges use standardized tests for guidance or placement purposes after the student is admitted. Seventy per cent of the colleges surveyed prefer academic courses in high school; 13 per cent have no data to indicate which type of high school preparation is best; 6 per cent prefer a classical program; and 6 per cent accept a program designed to meet the needs of the students.[12]

A New York State study authorized by the 1948 legislature suggests that institutions of higher learning are a chief bulwark of a free society; and one of higher education's fundamental contributions to civilization is the ability to discover and nurture human talent for the common good.[13] But again this raises the complex problem of who

---

[11]Ibid., pp. 1 and 5.

[12]Ibid., pp. 6-10 and 81.

[13]David S. Berkowitz, Inequality of Opportunity in Higher Education (Albany, New York: Williams Press, Inc., 1948), p. 35.

can succeed in college. Many high school graduates are prevented from entering an institution of higher learning. The public high school is non-selective, whereas most colleges are selective.

> The admission machinery must answer three essential questions: (1) What has the applicant done as measured by past academic performance? (2) What is he capable of doing as measured by innate ability and aptitude? (3) What do people think of him as measured by letters of recommendation and testimonials? Much of the additional information collected is largely irrelevant to the main purpose or serves a different aim.[14]

This raises the questions but the answers are not readily available. Students with apparently similar records may be entirely different risks because of the difference in standards in the various high schools from which they come. Reliably comparable data do not yet exist to any considerable extent. Factors affecting these data are (a) the degree of subjectivity inherent in any grading system, (b) variations in academic standards of different high schools, and (c) size of the graduation class.[15]

W. A. Lawrence in a longitudinal study of Louisiana State University students found that in general the highest correlations are obtained between first-year achievement and subsequent achievement. In his study of 1027 students

---

[14] Ibid., p. 26.

[15] Ibid.

entering the University, 602 (58.5 per cent of them) advanced into a senior college and 270 graduated. Thus 44.9 per cent of those entering a senior college went on to graduate from the University, but this was only 22.6 per cent of the beginning freshman group.[16] This, it should be reminded, was during the period of economic depression; and it might be that a high proportion of the dropouts were related more to economic reasons than to scholastic ability.

Two significant findings in the Lawrence study are: (1) The three placement tests (American Council on Education Psychological Test, the Cooperative English Test, and the Cooperative Mathematics Test) and the students' rank in his high school graduating class are significant as bases for predicting achievement in the Junior Division and in the senior colleges of that University; and (2) The composite scores of the three tests and the high school rank form a better basis for predicting achievement than any of the tests or high school rank taken singly.[17]

Other studies have examined various factors in relationship to college achievement. Reference is made to

---

[16]W. A. Lawrence, "An Evaluation of Achievement in the Various Colleges of the Louisiana State University with Special Reference to Certain Aspects of the Junior Division" (unpublished Doctoral dissertation, Louisiana State University, Baton Rouge, 1940).

[17]Ibid., p. 208.

these as background regarding the difficulties inherent in predicting college achievement. Patton's study of drop-outs from the Junior Division of Louisiana State University,[18] Russell's comparison of drop-outs and non-drop-outs at Michigan State University,[19] and Hank's similar study at the University of Arkansas[20] discuss those students who dropped out of college before graduation for various reasons. The studies of Adams,[21] Beyer,[23] Kim Ki Suk,[24] and

---

[18]Ben K. Patton, Jr., "A Study of Drop-Outs from the Junior Division of Louisiana State University, 1953-1955" (unpublished Doctoral dissertation, Louisiana State University, Baton Rouge, 1958).

[19]James Ward Russell, "A Comparison of Michigan State College Drop-Outs and Non-Drop-Outs According to Certain Factors" (unpublished Doctoral dissertation, Michigan State University, Lansing, 1952).

[20]Charles J. Hanks, "A Comparative Study of Factors Related to Retention and Withdrawal of Freshmen Students at the University of Arkansas" (unpublished Doctoral dissertation, University of Arkansas, Fayetteville, 1954).

[21]Sam Adams, "A Study of Various Factors Related to Success in College Physics" (unpublished Doctoral dissertation, Louisiana State University, Baton Rouge, 1951).

[22]Grace B. Agate, "Persistence in College as Related to Intelligence, Economic Background, and Present Occupation" (unpublished Doctoral dissertation, Louisiana State University, Baton Rouge, 1941).

[23]William F. Beyer, "A Study of the Performance of High School Biology Students in Basic College Biology" (unpublished Doctoral dissertation, Louisiana State University, Baton Rouge, 1952).

[24]Kim Ki Suk, "The Use of Certain Measurements of Academic Aptitude, Study Habits, Motivation, and Personality in the Prediction of Academic Achievement" (unpublished Doctoral dissertation, Louisiana State University, Baton Rouge, 1957).

McElwee[25] make significant contributions in certain specified areas.

In light of the rather general agreement of findings in these previous studies, why this further study? The more comprehensive data in this study and the more detailed treatment of the data may reveal other conclusions. Further, it may provide some additional insight for those colleges and universities who, in this time of expanding enrollments and costs, are seeking to limit the number of students who may enter. This problem is succinctly stated by Lins:

> Some persons have represented the anticipated large increases in enrollment as a tidal wave, a deluge, or a flood. This implies that our colleges will be inundated in the future. . . .[26]

The National Education Association reports that in the past decade (1954-1964) there has been an increase of 43 per cent in enrollment in public elementary and secondary schools but during this same period the number of high school graduates increased 93 per cent.[27]

---

[25]Tandy W. McElwee, "A Comparison of the Scholastic Achievement of the Transfer Students with that of Students Who Enter LSU as Freshmen" (unpublished Doctoral dissertation, Louisiana State University, Baton Rouge, 1952).

[26]L. J. Lins, Methodology of Enrollment Projections For Colleges and Universities (New York: The American Association of Collegiate Registrars and Admissions Officers, 1960), p. v.

[27]Education USA (Washington, D.C.: National Education Association, January 7, 1965), p. 75.

Admiral Rickover, discussing a proposed $250 million higher education bill before a Congressional Sub-Committee, stated "We have no definition of higher education. Our definitions are not good enough to act intelligently on this subject."[28] He expressed his views on the critical need for a national standard for high school graduates, a test taken voluntarily by students, which would become the standard on which college scholarships and admissions would be based.[29]

College students suggest limiting enrollments. A student editorial, entitled "What Price Education?", makes two points in facing the possibility of doubling enrollments at Louisiana State University.

> According to policy of the LSU Board and the State Board of Education, all public colleges and universities in Louisiana must admit all persons graduating from State approved high schools. . . .
>
> With the financial affairs of the State in such bad condition, the best way to meet the increased enrollments of college students . . . is to do away with the 'Open Door' at LSU and in the Universities of the State. Restrict the higher education facilities of the State to those suited for college work. It would seem more desirable to have a small percentage of the State with the best possible education, than masses of people with only an adequate education.[30]

---

[28] News item in Baton Rouge Morning Advocate, February 6, 1965.

[29] Ibid.

[30] Editorial in the Summer Reveille, Louisiana State University, Baton Rouge, June 23, 1964.

In July of 1964, News Services carried a story, "Some Colleges Closing Doors on Applications" which argues that there is not room enough for all who want in, and that there must be developed some criteria to select those admitted.[31] Numerous reports emphasize the problems of getting into college and particularly the prestige colleges and universities.

Numerous articles report on emotional illness from pressure to gain admission to prestige universities. Suicide among youths even has become a national concern.[32] Pressure there is, pressure to make our society greater through more and better education for all who can profit from it, and pressure to reduce the tremendous amounts of money involved. It all comes back to the question of who can succeed in college.

---

[31] News item in Baton Rouge State Times, July 22, 1964.

[32] G. K. Hodenfeld, "Speedup in Learning Causes Child Suicides, Breakdowns," Baton Rouge Morning Advocate, October 11, 1964, p. 11-A.

CHAPTER III

THE CORRELATION OF SELECTED FACTORS AND COLLEGE GRADE-POINT AVERAGES

Can college achievement be predicted? No studies made thus far have been able to determine means of more than chance predictability. Yet some means of knowing who may succeed in college is of interest to those involved in higher education. This study shows how one freshman class at a State University fared. This chapter presents the discrete data which provide a refined measure of academic achievement as college freshmen and shows the relationship among these data. Emphasis is placed on the correlation between the grade-point average of the first semester in college and other factors considered.

Lawrence's work has shown that "In general, the highest correlations are obtained between first-year's and subsequent achievement."[1] He further stated that the achievement in the freshman year of the Junior Division is a good index to achievement in the later years in the

---

[1] W. A. Lawrence, "An Evaluation of Achievement in the Various Colleges of the Louisiana State University with Special Reference to Certain Aspects of the Junior Division" (unpublished Doctoral dissertation, Louisiana State University, Baton Rouge, 1940).

University.[2] In an earlier study Lawrence found that practically all students who successfully completed the freshman year went on to graduate from the University.[3] Thus, there is evidence that successful work in the first year of college is a good predictor of continued success.

The high-school grade-point average. The 2775 freshmen in this study had a grade point average in high school of 2.555 (based on marks of A = 4 points; B = 3; C = 2; D = 1; F = 0). Thus the freshman class in the study had a very strong "C" average. The mean score of the high-school grade-point average was 2.555 with a standard deviation of .804 giving a range, in which approximately 68 per cent of all students fell, of 1.751-3.359.

Table I shows the number and per cent of pupils in each of eight intervals according to high-school grade-point

TABLE I

HIGH SCHOOL GRADE-POINT AVERAGES OF THE LOUISIANA STATE UNIVERSITY FRESHMAN CLASS OF 1963-1964

Averages	Not Known	1.00 1.49	1.50 1.99	2.00 2.49	2.50 2.99	3.00 3.49	3.50 3.99	4.00	Total
Number	61	194	404	646	601	493	316	60	2775
Per cent	2.2%	7.0%	14.6%	23.3%	21.7%	17.8%	11.4%	2.2%	100.2%

[2]Lawrence, loc. cit.

[3]W. A. Lawrence, "A Study of High School Standing in Relation to Achievement in College" (unpublished Master's thesis, Louisiana State University, Baton Rouge, 1929).

averages. The majority of those in the unknown column are foreign students for whom high-school averages were not available; some of the subjects had received a high-school diploma through tests of General Education Development. A requirement of a "C" average for admission to the University would have precluded college study for 598 members of this class; but 161 (27 per cent) of these were successful in completing the freshman year in good standing and an additional 107 (18 per cent) were eligible to continue college work on probation. These data are found in Table XI which reveals that 37 students (4.6 per cent) who had a "B" or better average in high school failed to do successful work as college freshmen. (Drop-outs excluded.)

The coefficient of correlation between the fall semester grade-point average as college freshmen and the grade-point average as high-school students is .501 which is significant at the .01 level of confidence where N is greater than 1000.

First semester college grade-point averages. The mean score of the 2543 freshmen who received marks at the end of their first semester was 1.132 based on a highest possible average of 3.000. The standard deviation .741 shows that approximately 68 per cent of the students had a grade-point average within the range .391-1.873. Removing

the marks of those who failed to make 6 semester hours and 6 honor points, (honor points based on 3 for A, 2 for B, 1 for C per course hour) the mean is 1.365 with a range, which includes approximately 68 per cent of the averages, of .725-2.005.

Cumulative College Grade-Point Average. There is little difference in values found for the total first year college marks and those for the first semester. The mean of cumulative grade-point averages is 1.015 which is .117 less than that of fall semester grade-point average. The standard deviation of .768 differs from that in fall, .741, by only .027 of a point. There were 164 students who failed to make sufficient grades during their second semester to remain in school. This was 38 per cent of the number who failed at end of the first semester and 7.7 per cent of the total who survived the first semester.

At the time these students registered Louisiana State University administered to each entering freshman a battery of three tests--The School and College Abilities Test,[4] The Cooperative English Test,[5] and The Cooperative Mathematics Test.[6] To what degree did these tests correlate

---

[4] School and College Abilities Test, Princeton, N.J.: Educational Testing Service, 1955.

[5] Cooperative English Test, Princeton, N.J.: Educational Testing Service, 1960.

[6] Cooperative Mathematics Test, Princeton, N.J.: Educational Testing Service, 1962.

with the student's grades in college?

The School and College Abilities Test. Based on a top converted score of 350 and a bottom score of 250 the mean score of the students entering the 1963-1964 freshman class at Louisiana State University was 299. Table II shows the results of this test.

TABLE II

SCORES RECEIVED BY LOUISIANA STATE UNIVERSITY ENTERING FRESHMEN, FALL 1963, ON THE SCHOOL AND COLLEGE ABILITIES TEST

Converted scores of	Less than 280	280 to 294	295 to 309	310 to 324	325 or more	Total
Number	93	663	1389	492	74	2711
Per cent of total	3.4%	24.5%	51.2%	18.1%	2.7%	100%

The coefficient of correlation with the fall semester grade-point average is .253 which is significant at the .01 level of confidence. When this test was correlated with the high-school grade-point average for these freshmen an r of .271 was obtained, also significant at the .01 level.

The Cooperative English Test. This is a combination test of reading and of the use of language abilities. The

results are used by the University to section freshmen into levels of English courses. For the fall semester of 1963 these placements were as follows:

I. With a converted score of 151 or less, the student enrolled in English 1A and was required to take 9 semester hours of freshman English

II. With a converted score of 152-167, he enrolled in English 1B and was required to take 6 semester hours of freshman English

III. With a converted score of 168-171, he enrolled in English 1C and was required to take one semester of freshman English

IV. With a converted score of 172 and above, he took the honors course.

Table III shows how the 1963 beginning freshmen achieved on this test. The mean score on the Cooperative English Test was 159.6 with a standard deviation of 14.3, thus within the range of 145.3-173.9 should be found about 68 per cent of the scores. Actually the percentage of scores found in this range, 145.3-173.9, is much greater than 68 per cent indicating that this is not a normal distribution. The coefficient of correlation with college grade-point averages for the fall semester is .253 which is significant at the .01 level of confidence.

TABLE III

SCORES RECEIVED BY LOUISIANA STATE UNIVERSITY ENTERING FRESHMEN, FALL 1963, ON THE COOPERATIVE ENGLISH TEST

Converted scores of	Below 140	140-149	150-159	160-169	Above 169	Total
Number	31	334	958	1082	322	2727
Per cent of total	1.1%	12.2%	35.1%	39.7%	11.8%	100%

The Cooperative Mathematics Test. The scores from this test sectioned students into the various mathematics courses and prevented enrollment in college chemistry unless mathematical ability was demonstrated. Table IV gives the results of this test.

TABLE IV

SCORES RECEIVED BY LOUISIANA STATE UNIVERSITY FRESHMEN, FALL 1963, ON THE COOPERATIVE MATHEMATICS TEST

Raw Score	0-5	6-11	12-17	18-23	24-29	30-35	36 up	Total
Number	33	168	356	449	610	701	418	2735
Per cent of Total	1.2%	6.1%	13.0%	16.4%	22.3%	25.6%	15.3%	100%

The mean score is 25.6. The standard deviation is 9.4, thus roughly 68 per cent of those taking the test should score in the range of 16.2-35. The coefficient of

correlation with the grade-point average for the fall semester in college is .411 and with the high-school grade-point average .406.

Table VII shows that 945 students, 34.7 per cent of the 2720 students included in this area of the study, had four units of college-preparatory mathematics in high school and thus should have been well prepared for The Cooperative Mathematics Test.

Summary. Using discrete data for selected factors the highest coefficient of correlation was found between high-school grade-point averages and first semester of college grade-point averages, a r of .501. Other relationships with the first semester college grade-point averages, expressed as coefficients of correlation were: Cooperative Mathematics Test, .411; School and College Abilities Test, .253; Cooperative English Test, .253. All these r's are significant at the .01 level of confidence. The three placement tests had a similar relationship to high-school grade-point averages.

CHAPTER IV

THE RELATIONSHIP OF ACHIEVEMENT CATEGORIES AND SELECTED FACTORS

THE CATEGORIES

In this study achievement has been categorized broadly in terms of normal progress toward a degree at Louisiana State University. The purpose of the Junior Division at Louisiana State University has already been stated on page 4. A more detailed discussion is presented by Patton.[1]

Achievement in this study is defined in terms of progress through the freshman year, obtaining credit hours and grades that will move the student on through the Junior Division and into one of the senior colleges. A student may achieve this with a minimum of a "C" average.

The achievement categories. Achievement categories used are as follows:

Category I. Those students eligible to enter a senior college at the end of the second

---

[1]Ben K. Patton, Jr., "A Study of Drop-Outs from the Junior Division of Louisiana State University, 1953-1955 (unpublished Doctoral dissertation, Louisiana State University, Baton Rouge, 1958), p. 10.

semester. This requires a minimum of 30 semester hours of credit with a "C" or better grade-point average

Category II. Those not eligible to enter a senior college at the end of the normal two semesters, but eligible to continue in the Junior Division without probation

Category III. Those eligible to continue in the Junior Division on probation

Category IV. Those dropped at the end of or during second semester because of academic deficiency

Category V. Those dropped at the end of or during the first semester because of academic deficiency

Category Zero. Those dropped for various reasons but without grades, which would have included them in one of the other five categories.

Comparison of the categories. These five categories represent progressively poorer achievement. Lawrence[2]

---

[2]W. A. Lawrence, "An Evaluation of Achievement in the Various Colleges of the Louisiana State University with Special Reference to Certain Aspects of the Junior Division" (unpublished Doctoral dissertation, Louisiana State University, Baton Rouge, 1940).

found his highest correlations between first-year achievement and subsequent college achievement. Some students in groups IV and V may return to college at a later time and go on to achieve a degree, but in terms of the first year they failed to achieve success. Thus there are, in terms of success according to university standards, three categories: students who were successful; those whose achievement is still to be proven; and those who failed out of the University in their first attempt.

Those who dropped out are included as Category 0 in order to provide a more realistic picture. The reader is referred to Patton's study which presents a detailed picture of a similar group.[3]

THE STATISTICAL TREATMENT

The tables, number and per cent. In the discussion of the selected factors and their relationship to achievement a general outline is followed. The tables show the number of students in each achievement category according to the various facets of the factor under study. Reading down the columns the percentages indicate that part of the total number in each interval that is found in each category. The percentage of the total number of students found

---

[3]Patton, op. cit.

in each interval is given below the totals for each interval.

Chi square treatment. The chi quare statistical treatment was used to determine whether a significant relationship existed between college achievement and the various factors.[4]

Garrett[5] has prepared an F table based on probabilities of the size of the chi square and the degrees of freedom which enables one to determine this. To find the F value the value of X^2 is divided by df and the F table used to compare the actual F value with the chance F value.

The levels of confidence. The .05 level of confidence, indicating that in only five observations in 100 would a divergence as large as that actually found be expected to occur by chance, is used as the minimum level to suggest significance. In many instances the differences were found to be significant at the .01 level of confidence.

The actual F value of the relationship between college achievement and given factors is shown on the tables as are the F values for the .05 and/or .01 level of confidence.

---

[4]Henry E. Garrett. Statistics in Psychology and Education (New York: Longmans, Green and Company, Incorporated, Fifth Edition, 1958), pp. 253ff.

[5]Garrett, op. cit., p. 451.

THE TABLES

Reading the tables. The tables for each factor are presented. It can be determined from the tables whether the factor has a significant relationship to college achievement. This is done by observing the actual F value in comparison with F value expected for the .05 or .01 level of confidence. The factors selected for this study were all found to be significant at the .01 level except the size of the high school graduating class, and this factor has a significant relationship at the .05 level of confidence. These figures are given at the bottom of each table.

The comparison of the observed and expected F values indicate significant relationships but do not locate specific degrees or areas of the relationship. This is determined by comparison of the observed results, indicated by the percentage of total students in each interval found in each category with the expected results, indicated by the percentage of total pupils found in each category. Greater achievement in Category I is indicated when percentages under intervals are greater than that in the totals column. Higher percentages in Categories IV and V indicate less achievement. Categories II and III vary in their interpretation depending on the factors.

SEX OF THE STUDENT AND ACHIEVEMENT

The sex of the student. Data in Table V show the relationship between the sex of the student and college achievement during the freshman year. This class had 58.8 per cent males and 41.2 per cent females. The relationship of the student's sex to achievement is significant at the .01 level.

Females fare better than males. In Category I, those making normal progress, there are 1067 students or 38.5 per cent of the entering freshmen. Of the 1631 males, 33.3 per cent achieved Category I, less than the expected 38.5 per cent. Of the 1142 females, 45.9 per cent achieved Category I, a number greater than the expected 38.5 per cent. Examination of the other categories shows that achievement of the males and females varied slightly in Categories II and IV, was in favor of the females in the probation category (III), and in Category V, first semester failures, the proportion of males almost doubled that of females--19.1 per cent of males and 9.7 per cent of females.

HIGH-SCHOOL BACKGROUND

The relationship of high-school English to college achievement. A student may graduate from a Louisiana high school with three units of credit in English. Generally

TABLE V

ACHIEVEMENT CATEGORIES AND SEX OF STUDENTS

Category	Male	Female	Total
	Number of Students by Categories and Sex		
I	543 33.3%	524 45.9%	1067 38.5%
II	308 18.9%	205 18.0%	513 18.5%
III	243 14.9%	131 11.5%	374 13.5%
IV	100 6.1%	64 5.6%	164 5.9%
V	312 19.1%	111 9.4%	423 15.3%
0	125 7.7%	107 9.4%	232 8.4%
Total	1631 100.0%	1142 100.0%	2773 100.%
Per cent of total in each interval	58.8%	41.2%	100.0%

$X^2 = 75.611$ df = 5

obtained F = 15.12 F at .01 = 3.02

high school graduates with less than four units of English would not be considered as having had adequate college preparation. Table VI shows that this general assumption seems true but with no certainty. Of the 119 students with only three credits 26.9 per cent did successful freshman college work; 16.8 per cent were put on probation; but 56.3 per cent either failed or dropped out. Thus more than half of those students with less than adequate preparation in high school English are in the poor college achievement group. Of those who were successful in the first year of college, some were in a college English course designed to move slowly, one which required three semesters of freshman English work rather than the normal two semesters.

Table VI shows that units of high school speech and/or journalism in addition to four units of English accomplished very little in terms of achievement of these freshmen. Actually students in this group varied little from those with only the basic four units.

Thus the significant difference found between college achievement and high school English background is found between those who successfully completed four units and those with credit in only three units of English. Further study may be needed to determine the effect of placement in college courses required of freshmen and their

TABLE VI

ACHIEVEMENT CATEGORIES AND CREDITS IN HIGH SCHOOL ENGLISH

Category	Three units in English (some speech)	Four units in English	Four units with speech, journalism, or both	Total
	Number of Students by Categories and H.S. English Credits			
I	17 14.3%	724 40.2%	312 40.1%	1053 39.0%
II	15 12.6%	338 18.8%	142 18.3%	495 18.4%
III	20 16.8%	240 13.8%	105 13.5%	365 13.5%
IV	7 5.9%	107 5.9%	44 5.7%	158 5.9%
V	48 40.3%	254 14.1%	106 13.6%	408 15.1%
0	12 10.1%	137 7.6%	69 8.9%	218 8.1%
Total	119 100.0%	1800 100.0%	778 100.0%	2697 100.0%
Per cent of total in each interval	4.4%	66.7%	28.8%	100.0%

$X^2 = 75.848$ df = 10
F = 7.58 F at .01 level = 2.35

relationship to the student's background in high school English.

The relationship of high-school mathematics to college achievement. There is a significant relationship between college achievement and the amount of mathematics the subjects had taken in high school, as shown in Table VII.

Two units of mathematics are required for graduation from Louisiana high schools, but a minimum of three units of mathematics is generally considered as adequate college preparation. Table VII shows that by this criterion 75.9 per cent of the freshmen in this study had adequate mathematics preparation for college. Those with four units of mathematics however, had a decided advantage in college achievement over students with three units of mathematics in each instance except in Category II.

A freshman's placement in college mathematics is determined by his score on the Cooperative Mathematics Test. Approximately one-fourth were required to take remedial mathematics. Thus the issue is clouded because the results being examined are not, in this sense, similar; but the purpose of remedial mathematics is to make it possible for the student to achieve to stay in school.

TABLE VII

ACHIEVEMENT CATEGORIES AND CREDITS IN HIGH SCHOOL MATHEMATICS

Category	One and one-half or two units, one of which is general mathematics	Two units algebra or algebra and geometry	Three units or three and one-half units	Four or more units	Total
	Number of Students by Categories and Patterns of HS Mathematics				
I	17	102	349	586	1054
	7.4%	24.1%	36.9%	52.3%	38.7%
II	28	78	180	213	499
	12.1%	18.4%	19.0%	19.0%	18.3%
III	38	70	129	129	366
	16.5%	16.5%	13.7%	11.5%	13.5%
IV	31	25	65	39	160
	13.4%	5.9%	6.9%	3.5%	5.9%
V	87	108	134	90	419
	37.7%	25.5%	14.2%	8.0%	15.4%
0	30	41	88	63	222
	13.0%	9.7%	9.3%	5.6%	8.2%
Total	231	424	945	1120	2720
	100.0%	100.0%	100.0%	100.0%	100.0%
Per cent of total in each interval	8.5%	15.6%	34.7%	41.2%	100.0%
X^2 = 345.038			df = 15		
F = 23.00			F at .01 level = 2.18		

Table VII shows that those students with more high school mathematics achieved greater success in college during the freshman year. If there were three or more units of high school credit the observed percentages were better than that expected in every category. Students with two units of college preparatory mathematics fared better than those with a minimum arithmetical background.

The relationship of high-school science to college achievement. There was a significant relationship between the units of science the freshmen took in high school and achievement as college freshmen. Examination of Table VIII shows that in the success categories the observed frequency exceeds the expected frequency when there are three or more units of science, or two units without general science, in the high-school background. Perhaps the better students do not take general science. This statement is borne out by the fact that the degree of successful college achievement is greater among those students with three high-school science courses, not including general science, than it appears to be within the group taking four units of science including general science.

The relationship of a college preparatory background in high school and college achievement. The college preparatory course set fourth in the guide for school

TABLE VIII

ACHIEVEMENT CATEGORIES AND BACKGROUND IN HIGH SCHOOL SCIENCE

Category	One Unit*	General science and one other	Two units without general science	General science and two others	Three units without general science	Four or more units	Total
	Number of Students by Categories and Patterns in H.S. Science						
I	11	154	137	338	100	314	1054
	22.9%	22.1%	44.2%	40.4%	53.2%	49.1%	38.8%
II	13	122	68	136	38	122	499
	27.1%	17.5%	21.9%	16.3%	20.2%	19.1%	18.4%
III	5	102	45	115	22	77	366
	10.4%	14.7%	14.5%	13.8%	11.7%	12.0%	13.5%
IV	2	53	14	66	6	19	160
	4.2%	7.6%	4.5%	7.9%	3.2%	3.0%	5.9%
V	11	189	23	119	13	63	418
	22.9%	27.2%	7.4%	14.2%	6.9%	9.8%	15.4%
0	6	76	23	62	9	45	221
	12.5%	10.9%	7.4%	7.4%	4.8%	7.0%	8.1%
Total	48	696	310	836	188	640	2718
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Per cent of total in each interval	1.8%	25.6%	11.4%	30.8%	6.9%	23.5%	100.0%

X^2 = 226.678 df = 25

F = 9.08 F at .01 level = 1.79

*Regulations of the Louisiana Board of Education require two units of science for high school graduation.

administrators in Louisiana is English, 4 units; mathematics, 2 units; general science; civics; American history; and physical education.[6] In this study vocational subjects, fine arts, and religion were considered non-college preparatory. A student who had taken in high school seventeen units without including these subjects is included in the college preparatory group.

There is a significant difference in college achievement between those students who had the general college preparatory course and those who did not--as shown in Table IX with the difference in favor of those students with the college preparatory background. The observed frequency exceeds the expected frequency in each category; more than 70 per cent did successful college work; while slightly more than 10 per cent failed. This is about one-third of the percentage of students with non-academic background who failed.

Vocational subject background. Table X shows the relationship of the number of vocational subjects studied in high school and college achievement. Included as vocational are business education courses such as typing,

---

[6]Raphiel Teagle, P. E. Marionneaux, Thomas R. Landry, and Mabel Collette, Handbook for School Administrators (Baton Rouge: State Department of Education, 1958), p. 209.

TABLE IX

ACHIEVEMENT CATEGORIES AND COLLEGE PREPARATORY COURSES

Category	16 or less units college preparatory subjects	17 or more units of college preparatory subjects	Totals
	Number of Students by Categories and College Preparatory Curriculum		
I	460 28.7%	609 51.8%	1068 38.5%
II	289 18.1%	224 19.1%	513 18.5%
III	244 15.2%	130 11.1%	374 13.5%
IV	116 7.2%	48 4.1%	164 5.9%
V	340 21.2%	83 7.1%	423 15.2%
0	151 9.4%	81 6.9%	232 8.4%
Total	1600 100.0%	1175 100.0%	2775 100.0%
Per cent of total in each interval	57.7%	42.3%	100.0%

$X^2 = 119.68$ df = 5
F = 23.94 F at .01 level = 3.02

TABLE X

ACHIEVEMENT CATEGORIES AND THE NUMBER OF HIGH-SCHOOL VOCATIONAL COURSES

Category	None*	One	Two	Three	Four or more	Total
	Number of Students by Categories and Vocational Units					
I	304 44.6%	333 44.9%	198 35.4%	96 28.4%	138 30.5%	1069 38.5%
II	134 19.6%	129 17.4%	110 19.6%	62 18.3%	78 17.2%	513 18.5%
III	100 14.7%	81 10.9%	81 14.5%	49 14.5%	63 13.9%	374 13.5%
IV	34 5.0%	39 5.3%	32 5.7%	22 6.5%	37 8.2%	164 5.9%
V	61 8.9%	97 13.1%	89 15.9%	73 21.6%	103 22.7%	423 15.2%
0	49 7.3%	63 8.5%	50 8.9%	36 10.7%	34 7.5%	232 8.4%
Total	682 100.0%	742 100.0%	560 100.0%	338 100.0%	453 100.0%	2775 100.0%
Per cent of total in each interval	24.6%	26.7%	20.2%	12.2%	16.3%	100.0%

X^2 = 94.575 df = 20
F = 4.73 F at .01 level = 2.18

*Included in None category are the 65 or so students whose academic background is not completely evaluated in this study, foreign students and General Educational Development graduates largely.

business, business law; agriculture and home economics; shop and industrial arts; and general mathematics and business mathematics, if these were not needed to meet mathematics requirements for graduation. Many students in the college preparatory group also took vocational courses. The majority of students had more than the seventeen units required for graduation and many had in excess of 20.

There was a significant relationship between college achievement and the number of vocational courses taken in high school. In the top achievement category students with none or one unit of vocational courses achieved better than the expected frequency with practically no difference between students with no vocational unit and students with one vocational unit; but students with two or more vocational units fell below the expected frequency.

There was little difference in achievement Categories II and III and the number of units of vocational work in high school. However, in the unsuccessful categories, IV, V, and Zero, there is a difinite pattern showing an increasing percentage of failures as the number of high school vocational units increases.

The relationship of high-school grade-point average to college achievement. In Chapter III it was shown that the highest correlation among the factors included was

between high-school grade-point averages and first semester of college grade-point averages. Table XI shows a significant relationship between high-school grade-point averages and college grade-point average. This is obvious and expected. But the great difference for the low achievers between their expected and their actual achievement as indicated by the percentages in the higher categories is notable, as is the fact that thirty-seven honor roll ("B" or better average) students failed out and an additional fifty-seven honor students dropped out. The "D" average students in high school, possibly not recommended for college, found 161 of their group in the successful class, better than 25 per cent doing acceptable college work and another 17.9 per cent still eligible to continue for the second semester but on probation.

Quartile rank in high-school class. Table XII is included because students from out of state must rank in the upper half of their graduating class. This table presents a brief glimpse at students in the bottom half of Louisiana high-school graduating classes and at how they fared at Louisiana State University. Data on high school rank were not available for 780 entering freshmen and this must be considered in the analysis of Table XII.

Students in the bottom quartile had just as much success as those in the second (next to bottom) quartile. This

TABLE XI

ACHIEVEMENT CATEGORIES AND HIGH-SCHOOL GRADE-POINT AVERAGES

Category	1.00 1.49	1.59 1.99	2.00 2.49	2.50 2.99	3.00 3.49	3.50 3.99	4.0	Total
	Number of Students by Categories and H.S. Grade-Point Average							
I	13 6.7%	49 12.1%	145 22.4%	249 41.4%	299 60.6%	243 76.9%	55 91.7%	1053 38.8%
II	32 16.5%	67 16.6%	146 22.5%	135 22.5%	80 16.2%	33 10.4%	4 6.7%	497 18.3%
III	32 16.5%	75 18.6%	115 17.8%	82 13.6%	45 9.1%	16 5.1%		365 13.4%
IV	20 10.3%	42 10.4%	51 7.9%	33 5.5%	12 2.4%	1 0.3%	1 1.7%	160 5.9%
V	78 40.2%	139 34.4%	130 20.1%	27 7.8%	17 3.4%	6 1.9%		417 15.4%
0	19 9.8%	32 7.9%	59 9.1%	55 9.2%	40 8.1%	17 5.4%		222 8.2%
Total	194 100.0%	404 100.0%	646 100.0%	601 100.0%	493 100.0%	316 100.0%	60 100.0%	2714 100.0%
Per cent of total in each interval	7.1%	14.9%	23.8%	22.1%	18.2%	11.6%	2.2%	100.0%

X^2 = 836.857 df = 30

F = 27.89 F at .01 level = 1.79

TABLE XII

ACHIEVEMENT CATEGORIES AND QUARTILE RANK IN HIGH-SCHOOL GRADUATING CLASS

Category	First (Low)	Second	Third	Fourth (high)	Total
	Number of Students by Categories and Quartile rank in H.S.				
I	30 17.0%	38 15.8%	170 31.5%	647 62.3%	885 44.4%
II	29 16.5%	43 17.8%	136 25.2%	161 15.5%	369 18.5%
III	26 14.8%	58 24.1%	83 15.4%	98 9.4%	265 13.3%
IV	18 10.2%	15 6.2%	32 4.9%	31 3.0%	96 4.8%
V	53 30.1%	68 28.2%	73 13.5%	33 3.2%	227 11.4%
0	20 11.4%	19 7.9%	45 8.3%	69 6.6%	153 7.7%
Total	176 100.0%	241 100.0%	539 100.0%	1039 100.0%	1995 100.0%
Per cent of total in each interval	8.8%	12.1%	27.0%	52.1%	100.0%

X^2 = 425.910 df = 15

F = 28.39 F at .01 level = 1.79

is shown by the almost identical percentages in Categories I plus II, and relatively close agreement in other categories, but here, as expected, the lowest quartile students had the least success.

That Louisiana State University gets a fair share of the better students is shown by the fact that 52.1 per cent of its entering students were in the top quartile of their graduating class.

THE ENVIRONMENT

Only two factors were included here, the size of the high school and the educational level of the parent with the most formal education.

The relationship between the size of the high-school graduating class and college achievement. This relationship was significant at the .05 level of confidence. Of all the factors included in the study this is the only one which is not significant at the .01 level. However, the intervals of enrollment size chosen are rather large, particularly affecting the category 1-99. Further analysis of class size might reveal different results.

An analysis of Table XIII reveals that students in Category I exceeded the expected frequency by greater percentages if they were from schools with about 1500 students

TABLE XIII

ACHIEVEMENT CATEGORIES AND SIZE OF HIGH SCHOOL GRADUATION CLASS

Category	1 to 99	100 to 199	200 to 299	300 to 399	400 and Over	Totals
	Number of Students by Categories and Class Size					
I	374 39.6%	231 41.0%	93 40.8%	135 45.8%	199 35.9%	1032 39.9%
II	164 17.4%	96 17.1%	56 24.6%	51 17.3%	110 19.8%	477 18.5%
III	143 15.1%	85 15.1%	24 10.5%	34 11.5%	65 11.7%	351 13.6%
IV	55 5.8%	30 5.3%	12 5.3%	19 6.4%	32 5.8%	148 5.7%
V	127 13.5%	74 13.1%	27 11.8%	36 12.2%	104 18.7%	368 14.2%
O	81 8.6%	47 8.3%	16 7.0%	20 6.8%	45 8.1%	209 8.1%
Total	944 100.0%	563 100.0%	228 100.0%	295 100.0%	555 100.0%	2585 100.0%
Per cent of total in each interval	35.5%	21.8%	8.8%	11.4%	21.5%	100.0%

$X^2 = 30.573$ df = 20
F = 1.53 F at .05 level = 1.52
F at .01 level = 1.79

in high school, but if Categories I and II are combined, the greatest increase in observed frequency shifts to the slightly smaller schools. The only group exceeding the percentage expected to fail was that from schools with the largest size of graduating classes.

The relationship of college achievement and formal education of the freshmen's parent. There was a significant relationship, at the .01 level, between achievement and the formal education of the student's parent, as observed from Table XIV. A majority of the students in this study were not first generation collegians, as more than half of their parents (57.5 per cent) had attended college.

In Category I, those students whose parents had attended college achieved at about the expected frequency level, while those whose parents had college degrees exceeded the expected frequency. Those whose parents had not attended college were below the expected frequency for success.

Examination of the other five categories reveals that most of the difference is in Category I. Thus it is concluded that the students whose parents attended college had an advantage for their own college achievement.

TABLE XIV

ACHIEVEMENT CATEGORIES AND FORMAL EDUCATION OF PARENT

Category	Less than high school graduation	High school graduate	Some college	College graduate	Law or Master's degree	Doctorate, MD, Ph.D., etc.	Total
	Number of Students by Categories and Education of Parent						
I	109	255	204	312	120	69	1069
	26.2%	33.3%	38.1%	45.4%	50.8%	50.7%	38.5%
II	67	141	111	123	50	21	513
	16.1%	18.4%	20.7%	17.9%	21.2%	15.4%	18.5%
III	56	101	81	88	28	20	374
	13.5%	13.2%	15.1%	12.8%	11.9%	14.7%	13.5%
IV	28	52	31	36	7	10	164
	6.7%	6.8%	5.8%	5.2%	3.0%	7.4%	5.9%
V	107	144	64	79	19	10	423
	25.7%	18.8%	12.0%	11.5%	8.1%	7.4%	15.2%
0	49	72	44	49	12	6	232
	11.8%	9.4%	8.2%	7.1%	5.1%	4.4%	8.4%
Total	416	765	535	687	236	136	2775
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Per cent of total in each interval	15.0%	27.6%	19.3%	24.8%	8.5%	4.9%	100.0%

X^2 = 130.938 df = .25

F = 5.24 F at .01 level = 1.79

THE COLLEGE PLACEMENT TESTS

These three tests were correlated with freshman grade-point average in Chapter III. The tests are placement tests and are used as such. This section, through its tables, presents a more comprehensive view of achievement in relation to scores on these placement tests.

The School and College Abilities Test and college achievement. There was a significant relationship between achievement during the freshman year in college and the scores on the School and College Abilities Test. The trend seen in Table XV definitely favors those with the higher scores. Omitting scores in range of 250-264 because the number in this column is too small for normal comparison, there is an across-the-board increase in successful achievement in Category I and a rise to the mean and then a decrease in achievement Category II. If these two categories are summed and considered as successful achievement the pattern is very definitely one of increased success for those with higher test scores.

The unsuccessful categories, IV and V, individually and combined, show a very definite drop in numbers as the School and College Abilities Test scores increase with no failure in the highest range. The observed frequency of

TABLE XV

ACHIEVEMENT CATEGORIES AND SCHOOL AND COLLEGE ABILITIES TEST SCORES

Category	250*-264	265-279	280-294	295-309	310-324	325 & Over	Total
	Number of Students by Categories and Scores on SCAT**						
I	1	8	119	559	304	62	1053
	20.0%	9.1%	17.9%	40.2%	61.8%	83.8%	38.8%
II		7	120	275	88	5	495
		8.0%	18.1%	19.8%	17.9%	6.8%	18.3%
III		10	121	196	38	2	367
		11.4%	18.3%	14.1%	7.7%	2.7%	13.5%
IV		11	60	78	10		159
		12.5%	9.0%	5.6%	2.0%		5.9%
V	2	44	180	164	18		417
	40.0%	50.0%	28.5%	11.8%	3.7%		15.4%
0	2	8	54	117	34	5	220
	40.0%	9.1%	8.1%	8.4%	6.9%	6.8%	8.1%
Total	5	88	663	1389	492	74	2711
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Per cent of total in each interval	0.2%	3.2%	24.5%	51.2%	18.1%	2.7%	100.0%

$X^2 = 491.565$ df = 20

F = 24.85 F at .01 level = 1.79

*This column combined with next in computing X^2.

**School and College Abilities Test.

failure is below the expected frequency with scores of 295 or higher.

The Cooperative English Test and college achievement. The coefficient of correlation between scores on this test and the fall semester grade-point average was as low as any of the factors studied. Yet the relationship of these scores to college achievement is significant at the .01 level of confidence. Table XVI shows that the higher the English test score, the more likely one was to achieve success as a college freshman.

The only area of real deviation is in Category I where lowest scores actually had a higher precentage of success than the next higher interval of scores; however, combining the Categories I and II this deviation disappears and the higher one's score the better his achievement.

How well prepared were the entering freshmen college students in their reading and English background? The use of test scores to section students into Freshman English courses is discussed on page 24. Using a method of interpolation the number of students in the various section of English can be estimated from Table XVI. Approximately 20 per cent of these were placed in the remedial English course, but of these about 30 per cent did successful work as measured by their achievement at the levels of Categories I and

TABLE XVI

ACHIEVEMENT CATEGORIES AND COOPERATIVE ENGLISH TEST SCORES

Category	Below 140*	140-149	150-159	160-169	170-179	180*	Totals
	Number of Students by Categories and Cooperative English Test Scores						
I	4	35	255	541	231	8	1056
	12.9%	10.5%	26.6%	50.0%	68.3%	80.0%	38.7%
II		44	196	218	41	1	500
		13.2%	20.5%	20.1%	13.1%	10.0%	18.3%
III	3	49	174	120	21		367
	9.7%	14.7%	18.2%	11.1%	6.7%		13.5%
IV	5	42	71	34	8		160
	16.1%	12.6%	7.4%	3.1%	2.6%		5.9%
V	17	127	180	86	8		418
	54.8%	38.0%	18.8%	7.9%	2.6%		15.3%
0	2	37	82	83	21	1	226
	6.5%	11.1%	8.6%	7.7%	6.7%	10.0%	8.3%
Total	31	334	958	1082	312	10	2727
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Per cent of total in each interval	1.1%	12.2%	35.1%	39.7%	11.4%	0.4%	100.0%

X^2 = 556.644 df = 20

F = 27.83 F at .01 level = 2.18

*These columns combined with that just above or just below in Computing X^2.

II. Approximately 1600 students, about 60 per cent, took the normal college English courses and 900 of these, more than 50 per cent, achieved successfully. Approximately 20 per cent of the others took advanced courses in freshman English and achieved success, as shown by their inclusion in Categories I and II at about the rate of 60 per cent. Roughly an equal number of entering freshmen were in remedial and advanced English classes. There should be further study to determine the effect of grouping for college English classes according to these test scores and its effect on achievement as college freshmen.

The Cooperative Mathematics Test scores and college achievement. There is a significant difference at the .01 level of confidence between the score made on the Cooperative Mathematics Test and college achievement. This difference is not of uniform pattern, as Table XVII reveals.

In general the higher the mathematics score the percentages of those achieving Category I rose, becoming very high in the 36-40 interval, so high as to decrease the percentage in Category II for that interval. In Category III the trend favors the higher scores, as each higher interval shows a lower percentage with one exception, as do categories IV and V. The dropout category is regular with the midpoint, interval 18-23, the expected frequency.

TABLE XVII

ACHIEVEMENT CATEGORIES AND COOPERATIVE MATHEMATICS TEST RAW SCORES

Category	0-5	6-11	12-17	18-23	24-29	30-35	36-40	Total
	Number of Students by Categories and Cooperative Mathematics Test Scores							
I	5	17	66	113	209	348	298	1056
	15.2%	10.1%	18.5%	25.2%	34.3%	49.3%	71.3%	38.6%
II	8	23	54	94	132	140	54	505
	24.2%	13.6%	15.2%	20.9%	21.6%	20.0%	12.9%	18.5%
III	2	32	49	79	100	82	25	369
	6.1%	19.0%	13.8%	17.6%	16.4%	11.7%	6.0%	13.5%
IV	2	17	32	43	40	22	6	162
	6.1%	10.1%	9.0%	9.6%	6.6%	3.1%	1.4%	5.9%
V	13	58	114	83	80	60	11	419
	39.4%	34.5%	32.0%	18.5%	13.1%	8.6%	2.6%	15.3%
0	3	21	41	37	49	49	24	224
	9.1%	12.5%	11.5%	8.2%	8.0%	7.0%	5.7%	8.2%
Total	33	168	356	449	610	701	418	2735
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Per cent of total in each interval	1.2%	6.1%	13.0%	16.4%	22.3%	25.6%	15.3%	100.0%

X^2 = 529.245 df = 30

F = 17.64 F at .01 level = 1.79

Table VII shows that freshmen had a strong mathematical background in terms of the number of high-school courses in mathematics. Table XVII, by interpolation, shows roughly that 1200 students, about 40 per cent, had less than adequate mathematical background and were required to take remedial mathematics in college (scores of 25 or less). Of this group about 50 per cent achieved success as measured by their inclusion in achievement Categories I and II. Approximately 15 per cent of the entering freshmen were eligible for retesting with possible placement in advanced mathematics, requiring a score on the Cooperative Mathematics Test of 37 or more. A small proportion of students in this interval failed and another small number dropped out.

COLLEGE PREFERENCE AND ACHIEVEMENT

The relationship of senior college preference and achievement. The student's preparation and background should enable him to make a wise choice of his field of endeavor. That there is a significant relationship between achievement and preference for a senior college is borne out in Table XVIII. However, there is not an easily recognized regular trend found in this table. The kinds of courses taken in college in the first year would vary very little, regardless of the college preference.

TABLE XVIII

ACHIEVEMENT CATEGORIES AND INDICATED PREFERENCE FOR A SENIOR COLLEGE
(AS ENTERING FRESHMEN)

Category	Undecided	Agricul-ture	Arts and Sciences	Law	Medicine and Nursing	Business Adminis-tration	Chemistry Physics Med. Tec.	Education	Engineer-ing	Music	Totals
	Number of Students by Categories and College Preference										
I	99	88	279	34	78	106	55	179	143	8	1069
	37.2%	35.2%	41.0%	44.2%	42.4%	30.4%	46.2%	39.9%	37.8%	34.8%	38.5%
II	49	46	125	10	30	59	21	79	87	7	513
	18.4%	18.4%	18.4%	13.0%	16.3%	16.9%	17.6%	17.6%	23.0%	30.4%	18.5%
III	32	40	89	10	21	51	14	51	63	3	374
	12.0%	16.0%	13.1%	13.0%	11.4%	14.6%	11.8%	11.4%	16.7%	13.0%	13.5%
IV	21	21	38	2	10	20	3	33	14	2	164
	7.9%	8.4%	5.6%	2.6%	5.4%	5.7%	2.5%	7.3%	3.7%	8.7%	5.9%
V	50	36	90	17	34	84	8	58	44	2	423
	18.8%	14.4%	13.2%	22.5%	18.5%	24.1%	6.7%	12.9%	11.6%	8.7%	15.2%
0	15	19	59	4	11	29	18	49	27	1	232
	5.6%	7.6%	8.7%	5.2%	6.0%	8.3%	15.1%	10.9%	7.1%	4.3%	8.4%
Total	266	250	680	77	184	349	119	449	378	23	2775
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Per cent of total in each interval	9.0%	9.0%	24.5%	2.8%	6.6%	12.6%	4.3%	16.2%	13.6%	0.8%	100.0%

$X^2 = 93.062$ df = 45
F = 2.07 F at .01 level =1.79

Examination of Category I shows an expected frequency of 38.5 per cent and an observed low, in Business Administration, of 30.4 per cent and observed high, in Chemistry and Physics, of 46.2 per cent.

In Category II the expected frequency of 18.5 per cent is exceeded only by Engineering and Music, with an observed low of 13 per cent for future lawyers.

Category III's expected frequency of 13.5 per cent is exceeded only by Agriculture's 16 per cent, Business Administration's 14.6 per cent, and Engineering's 16.7 per cent. The low of 11.4 per cent is found in the groups indicating a preference for Medicine and Education.

The expected frequency of 5.9 per cent in Category IV is compared with an observed frequency of 2.5 per cent in Chemistry and Physics and 8.7 per cent in Music.

In Category V, those who failed out of the University, the expected frequency was 15.2 per cent for each of the groups. Few future scientists failed out, with an observed frequency of failure in Chemistry and Physics of 6.7 per cent. The Music group had 8.7 per cent in this failing category and Engineering had 11.6 per cent. Business Administration's rate of attrition exceeded all other schools with an observed frequency of 24.1 per cent. Possibly the significance of the difference is found in this category.

It is not too surprising that, while Chemistry and Physics led in achievement, many of its prospective students dropped out; however, Arts and Sciences had a greater observed frequency in the dropout category. Music had the fewest dropouts, a single student. The undecided group had the smallest percentage of dropouts in most instances.

CHAPTER V

THE RELATIONSHIP OF CERTAIN FACTORS TO THE STUDENT'S INDICATED PREFERENCE FOR A SENIOR COLLEGE

Is there a significant relationship between the student's choice of a field of study and his background of high-school preparation? Were the choices made by members of this particular class realistic in terms of these? This chapter presents information on these questions.

During registration each freshman indicates the senior college which he plans to enter upon leaving the Junior Division. This may or may not be the college he actually enters; but what a high-school graduate wishes to study should have some relation to his high school background. Achievement of this freshman class in relation to the various colleges and schools for which members indicated a preference is shown in Table XVIII. This relationship is significant at the .01 level of confidence.

The tables which follow and the data, including the X^2 value, the degrees of freedom, the observed F value, and the expected F value, provide a more detailed analysis of the student's high school curriculum, his environment, and

academic ability, and the relationship of these to the senior college choice.

Of the nine college choices available to the student, six are designated by the administration of Louisiana State University as colleges: Agriculture, Arts and Sciences, Business Administration, Chemistry and Physics, Education, and Engineering. The other three are officially schools: The School of Law, the School of Medicine, and the School of Music. However, in this study they have been treated as colleges.

THE HIGH-SCHOOL CURRICULUM

The relationship between the senior college preference and the high-school English background. Communications, the ability to get ideas over to others, is one of today's greater problems. One industrial executive has stated it thus, "a mathematics background and ability is essential to our young engineers but their and our basic problem is in communication, their ability to write so others may understand."[1]

---

[1]Opinion expressed by Hugh Coughlin, President, Central Louisiana Electric Company, Pineville, Louisiana during address to Public School Administrators of Rapides Parish, March 9, 1965.

This study did not reveal the students' ability to communicate; but Table XIX shows a significant relationship between the amount of credit in high-school English and the preference indicated for college. The number of potential engineers with less than the regular college preparation in English exactly equaled the expected number. Those with the basic four units exceeded the expected frequency but those with additional units in speech or journalism fell far below the expected frequency.

Freshmen with less than four units of high-school English seem to be drawn toward Business Administration and Education, as the observed frequencies greatly exceed the expected frequencies. Also a greater percentage of this group dropped out. However, the groups indicating these two senior colleges had a greater than expected number of students whose background included speech and/or journalism.

Senior college preference in relation to the student's credits in high-school mathematics. There is a significant relationship, at the .01 level, between the amount of high-school mathematics offered by the freshman and his preference for a senior college.

Students choosing the more technical areas of study bring a broader mathematical experience to the University.

TABLE XIX

SENIOR COLLEGE PREFERENCE AND CREDITS IN HIGH-SCHOOL ENGLISH

College Preference	Three units English (some speech)	Four units English	Four units with speech, journalism or both	Totals
	Number of Students by Colleges and H.S. English Credits			
Agriculture	12 10.1%	178 8.9%	52 6.7%	242 9.0%
Arts and Sciences	17 14.3%	436 24.3%	222 28.6%	675 25.1%
Law	2 1.7%	48 2.7%	25 3.2%	75 2.8%
Medicine and Nursing	6 5.0%	127 7.1%	41 5.3%	174 6.5%
Business Administration	25 21.0%	199 11.1%	115 14.8%	339 12.6%
Chemistry and Physics	2 1.7%	86 4.8%	26 3.3%	114 4.2%
Education	22 18.5%	264 14.7%	152 19.6%	438 16.3%
Engineering	16 13.4%	280 15.6%	65 8.4%	361 13.4%
Music	2 1.7%	17 0.9%	3 0.4%	22 0.8%
Undecided	15 12.6%	161 9.0%	76 9.8%	252 9.4%
Total	119 100.0%	1796 100.0%	777 100.0%	2692 100.0%

TABLE XIX (continued)

College Preference	Three units English (some speech)	Four units English	Four units with speech, journalism or both	Totals
	Number of Students by Colleges and H.S. English Credits			
Per cent of total in each interval	4.4%	66.7%	28.9%	100.0%

$X^2 = 68.295$ df = 18
F = 3.83 F at .01 level = 1.97

Of the 2715 students included in Table XX, 75.9 per cent had taken or exceeded the traditional college preparation course. Those whose preference was Engineering had the greatest proportion in the group with four or more units in high-school mathematics. Chemistry and Physics, Medicine, and Law also exceeded the expected percentage in this column.

In Table XX it may be seen that the Colleges of Business Administration and Education were indicated as preferences by greater than the normally expected percentages of students with less than the suggested mathematics for college-bound high-school graduates.

Senior college preference in relation to units in high-school science. There is a significant relationship between the college indicated and the student's background in high-school science. As seen in Table XXI those headed for the more technical colleges, Chemistry and Physics and Engineering, show a higher than expected percentage in additional units of science. Those indicating a preference for Law have a greater than the expected frequency in the four-units column. The one-unit column is irregular because two units of science are required for graduation from

TABLE XX

SENIOR COLLEGE PREFERENCE AND CREDITS IN HIGH-SCHOOL MATHEMATICS COURSES

College preference	Two units of which one is general mathematics	Two units algebra or algebra and geometry	Three or three and one-half units	Four or more units	Total
	Number of Students by Colleges and H.S. Mathematics Credits				
Agriculture	35	57	100	64	246
	10.8%	13.4%	10.6%	5.7%	9.1%
Arts and Sciences	53	109	254	262	678
	22.9%	25.7%	27.0%	23.4%	25.0%
Law	7	8	26	36	77
	3.0%	1.9%	2.8%	3.2%	2.8%
Medicine and Nursing	4	13	59	99	175
	1.7%	3.1%	6.3%	8.9%	6.4%
Business Administration	45	63	126	110	344
	19.5%	14.9%	13.4%	9.8%	12.7%
Chemistry and Physics	4	8	29	73	114
	1.7%	1.9%	3.1%	6.5%	4.2%
Education	64	94	186	97	441
	27.7%	22.2%	19.7%	8.7%	16.2%
Engineering	3	18	75	268	364
	1.3%	4.2%	8.0%	24.0%	13.4%
Music	3	4	9	6	22
	1.3%	0.9%	1.0%	0.5%	0.8%
Undecided	23	50	78	103	254
	10.0%	11.8%	8.3%	9.2%	9.4%
Total	231	424	942	1118	2715
	100.0%	100.0%	100.0%	100.0%	100.0%

TABLE XX (continued)

College preference	Two units of which one is general mathematics	Two units algebra or algebra and geometry	Three or three and one-half units	Four or more units	Total
	Number of Students by Colleges and H.S. Mathematics Credits				
Per cent of total in each interval	8.5%	15.6%	34.7%	41.2%	100.0%

X^2 = 346.259 df = 27
F 12.82 F at .01 level = 1.79

TABLE XXI

SENIOR COLLEGE PREFERENCE AND CREDITS IN HIGH-SCHOOL SCIENCE COURSES

College preference	One Unit*	General science and one other	Two units without general science	General science and two others	Three units without general science	Four or more units	Total
	Number of Students by Colleges and Patterns in H.S. Science						
Agriculture	5 10.4%	55 7.9%	33 10.6%	95 11.4%	12 6.4%	46 7.2%	246 9.1%
Arts and Sciences	15 31.2%	174 25.0%	120 38.7%	184 22.1%	47 25.1%	137 21.5%	677 25.0%
Law	2 4.1%	18 2.6%	6 1.9%	26 3.1%	4 2.1%	31 3.3%	77 2.8%
Medicine and Nursing		10 1.4%	16 5.2%	54 6.5%	23 12.3%	72 11.3%	175 6.5%
Business Administration	10 20.8%	143 20.5%	31 1010%	94 11.3%	17 9.1%	49 7.7%	344 12.7%
Chemistry and Physics	1 2.1%	5 0.7%	7 2.3%	28 3.4%	13 7.0%	60 9.4%	114 4.2%

TABLE XXI (continued)

College preference	One unit*	General science and one other	Two units without general science	General science and two others	Three units without general science	Four or more units	Total
	Number of Students by Colleges and Patterns in H.S. Science						
Education	7 14.6%	193 27.7%	32 10.3%	168 20.1%	9 4.8%	31 4.9%	440 16.2%
Engineering	2 4.1%	27 3.9%	31 10.0%	91 11.5%	46 24.6%	162 25.4%	364 13.4%
Music		8 1.1%	8 2.6%	2 0.2%		4 0.6%	22 9.8%
Undecided	6 12.5	63 9.1%	26 8.4%	87 10.4%	16 8.6%	56 8.8%	254 9.4%
Total	48 100.0%	696 100.0%	310 100.0%	834 100.0%	187 100.0%	638 100.0%	2713 100.0%
Per cent of total in each interval	1.8%	25.7%	11.4%	30.7%	6.9%	23.5%	100.0%

X^2 = 529.558 df = 45
F = 11.77 F at .01 level = 1.79

*A student could not graduate from a Louisiana High School with one unit. Those in this column, thus, are probably out-of-state students.

a Louisiana high school.[2]

Business Administration and Education have more than the expected proportion of students with minimum requirements in high-school science. Those who chose Arts and Sciences tended to emphasize the content courses rather than general science, as the observed frequency far exceeds the expected frequency in these categories.

Senior college preference and the number of social science courses in high school. Table XXII shows a significant relationship at the .01 level of confidence between the number of units in social science and the expressed preference for a senior college. The choice of two colleges presents a pattern of an increasing number of social science credits with a greater observed frequency than that expected--Education and Arts and Sciences. The undecided group also follows this pattern. Two colleges show a decreasing pattern-Medicine and Music. All others follow an irregular pattern.

Senior college preference and the number of units in foreign language. Table XXIII shows a significant relationship at the .01 level of confidence between the student's

---

[2]Raphiel Teagle, et al., Handbook for School Administrators (Baton Rouge: State Department of Education, 1958), p. 162.

TABLE XXII

SENIOR COLLEGE PREFERENCE AND THE NUMBER OF HIGH-SCHOOL SOCIAL SCIENCE COURSES

College preference	One unit*	Two units	Three units	Four or more units	Totals
	Number of Students by Colleges and Units of H.S. Social Science				
Agriculture	1 11.1%	99 11.3%	98 7.6%	48 8.8%	246 9.1%
Arts and Sciences	3 33.3%	215 24.5%	316 24.6%	144 26.5%	678 25.0%
Law	1 11.1%	25 2.9%	30 2.3%	21 3.9%	77 2.8%
Medicine and Nursing	1 11.1%	65 7.4%	91 7.1%	18 3.3%	175 6.4%
Business Administration	1 11.1%	105 12.0%	173 13.4%	65 12.0%	344 12.7%
Chemistry and Physics		49 5.6%	43 3.3%	22 4.1%	114 4.2%
Education	1 11.1%	128 14.6%	205 15.9%	107 19.7%	441 16.2%
Engineering	1 11.1%	113 12.9%	194 15.1%	56 10.3%	364 13.4%
Music		11 1.3%	9 0.7%	2 0.4%	22 0.8%
Undecided		66 7.5%	128 9.9%	60 11.0%	254 9.4%
Totals	9 100.0%	876 100.0%	1287 100.0%	543 100.0%	2715 100.0%

TABLE XXII (continued)

College preference	One unit*	Two units	Three units	Four or more units	Totals
	Number of Students by Colleges and Units of H.S. Social Science				
Per cent of total in each interval	0.3%	32.3%	47.4%	20.0%	100.0%

$X^2 = 54.927$ df = 27

F = 2.04 F at .01 level = 1.79

*Two units required for graduation from high school in Louisiana.

TABLE XXIII

SENIOR COLLEGE PREFERENCE AND THE NUMBER OF UNITS IN FOREIGN LANGUAGE IN HIGH SCHOOL

College preference	None*	One	Two	Three	Four +	Total
	Number of Students by Colleges and H.S. Credits in Foreign Language					
Agriculture	111 13.9%	38 8.3%	68 7.0%	19 7.5%	14 4.9%	250 9.0%
Arts and Sciences	121 15.1%	96 20.9%	259 26.6%	80 31.4%	124 43.8%	680 24.6%
Law	13 1.6%	12 2.6%	33 3.4%	10 3.9%	9 3.2%	77 2.8%
Medicine and Nursing	37 4.6%	27 5.9%	82 8.4%	22 8.6%	16 5.7%	184 6.6%
Business Administration	123 15.4%	71 15.4%	107 11.0%	27 10.6%	21 7.4%	349 12.6%
Chemistry and Physics	24 3.0%	14 3.0%	56 5.8%	13 5.1%	12 4.2%	119 4.2%
Education	142 17.8%	69 15.0%	161 16.6%	41 16.1%	36 12.7%	449 16.2%

TABLE XXIII (continued)

College preference	None*	One	Two	Three	Four +	Total
	Number of Students by Colleges and H.S. Credits in Foreign Language					
Engineering	128 16.0%	71 15.4%	135 13.9%	20 7.8%	24 8.5%	378 13.7%
Music	8 1.0%	4 0.9%	4 0.4%	4 1.6%	3 1.1%	23 0.8%
Undecided	92 11.5%	58 12.6%	67 6.9%	19 7.5%	24 8.5%	260 9.4%
Totals	799 100.0%	460 100.0%	972 100.0%	255 100.0%	283 100.0%	2769 100.0%
Per cent of total in each interval	28.9%	16.6%	35.1%	9.2%	10.2%	100.0%

X^2 = 198.341 df = 36

F = 5.56 F at .01 level = 1.79

college preference and the number of units of foreign language studied in high school. More than half of the whole freshman class, 54.5 per cent of them, had taken two or more units of foreign language.

Students with four or more units of foreign language overwhelmingly chose the College of Arts and Sciences. Among those indicating preference for that college 68.1 per cent had had two or more units of foreign language. Law and Music were the only other colleges which had a greater observed frequency than that expected in the group with four or more units.

Preference for a senior college in relation to the number of non-academic courses. Data were collected for two groups of non-academic high-school courses. These were vocational courses, which are well defined and rather equally considered in all high schools, and other courses, generally fine arts and religion. The latter are not equally considered by the various high schools and unit credit ranged from no credit toward graduation to a full unit in each of several such courses. Generally such students exceeded the required seventeen units for graduation from high school.

Senior college preference and number of vocational units. Table XXIV shows the relationship of the number of

TABLE XXIV

SENIOR COLLEGE PREFERENCE AND THE NUMBER OF VOCATIONAL* SUBJECTS TAKEN IN HIGH SCHOOL

College preference	None#	One	Two	Three	Four +	Total
	Number of Students by Colleges and Vocational Units of H.S. Credits					
Agriculture	43 6.3%	42 5.7%	44 7.9%	31 9.2%	90 20.0%	250 9.0%
Arts and Sciences	203 29.9%	198 26.7%	130 23.3%	86 25.4%	63 14.0%	680 24.6%
Law	29 4.3%	26 3.5%	11 2.0%	8 2.4%	3 0.7%	77 2.8%
Medicine and Nursing	57 8.4%	60 8.1%	42 7.5%	15 4.4%	10 2.2%	184 6.6%
Business Administration	64 9.4%	65 8.8%	81 14.5%	55 16.3%	84 18.6%	349 12.6%
Chemistry and Physics	37 5.4%	40 5.4%	21 3.8%	11 3.3%	10 2.2%	119 4.2%

TABLE XXIV (continued)

College preference	None#	One	Two	Three	Four +	Total
	Number of Students by Colleges and Vocational Units of H.S. Credits					
Education	75 11.0%	117 15.8%	90 16.1%	63 18.6%	104 23.2%	449 16.2%
Engineering	111 16.3%	110 14.8%	82 14.7%	39 11.5%	36 8.0%	378 13.7%
Music	10 1.5%	7 0.9%	3 0.5%		3 0.7%	23 0.8%
Undecided	51 7.5%	76 10.3%	55 9.8%	30 8.9%	48 10.6%	260 9.4%
Total	680 100.0%	741 100.0%	559 100.0%	338 100.0%	451 100.0%	2769 100.0%
Per cent of total in each interval	24.6%	26.8%	20.2%	12.2%	16.3%	

X^2 = 238.452 df = 36
F = 6.65 F at .01 level = 1.79

*Vocational courses include agriculture, home economics, business, typing, shop, industrial arts, and general or business mathematics if algebra II or geometry studied.

#Included in this column are 65 or so students whose transcripts could not be evaluated.

vocational units and the student's preference for a senior college. It is a significant relationship at the .01 level of confidence.

Slightly over 50 per cent of the freshmen in this study had only one or no vocational courses. The trend for those students with two or more units in vocational work shows a regular increase in percentage for students choosing Agriculture, Business Administration, Education, and Music, and all but the latter have a much greater than expected frequency in the four-or-more interval. A regular decrease in the number of vocational units is shown by students choosing Medicine, Chemistry and Physics, and Engineering, and all have much less than the expected frequency at the four-or-more units level.

Senior college preference and number of units in Fine Arts. Table XXV shows the relationship between other courses and the senior college choice; and this difference is significant at the .01 level. However, wide variation in practices of assigning credits cause these data to be viewed with considerable question.

It can be seen that preference for the school of Music exceeded the expected frequency by about seven times. Preference for the College of Education increased as the number of units increased and exceeded the expected frequency

TABLE XXV

SENIOR COLLEGE PREFERENCE AND THE NUMBER OF FINE ARTS COURSES TAKEN FOR CREDIT#

College preference	None*	One	Two	Three	Four +	Total
	Number of Students by Colleges and H.S. Units in Fine Arts					
Agriculture	128 9.4%	58 9.1%	35 9.1%	22 11.5%	7 3.6%	250 9.0%
Arts and Sciences	321 23.6%	160 25.1%	111 28.8%	54 28.3%	34 17.5%	680 24.6%
Law	40 2.9%	16 2.5%	13 3.4%	4 2.1%	4 2.1%	77 2.8%
Medicine and Nursing	101 7.4%	38 6.0%	23 6.0%	15 7.9%	7 3.6%	184 6.6%
Business Adminis-tration	178 13.1%	89 13.9%	36 9.3%	21 11.0%	25 12.9%	349 12.6%
Chemistry and Physics	64 4.7%	23 3.6%	13 3.4%	7 3.6%	12 6.2%	119 4.3%

TABLE XXV (continued)

College preference	None*	One	Two	Three	Four +	Total
	Number of Students by Colleges and H.S. Units in Fine Arts					
Education	178 13.1%	116 18.2%	71 18.4%	37 19.4%	47 24.2%	449 16.2%
Engineering	229 16.8%	72 11.3%	43 11.1%	9 4.7%	25 12.9%	378 13.7%
Music	4 0.3%	2 0.3%	3 0.8%	3 1.6%	11 5.7%	23 0.8%
Undecided	117 8.6%	64 10.0%	38 9.8%	19 9.9%	22 11.3%	260 9.4%
Total	1360 100.0%	638 100.0%	386 100.0%	191 100.0%	194 100.0%	2769 100.0%
Per cent of total in each interval	49.1%	23.0%	13.9%	6.9%	7.0%	100.0%

X^2 = 869.4 df = 36
F = 24.15 F at .01 level = 1.79

#Religion also included.

*includes 65 students whose transcripts could not be evaluated.

in each category from one through four-or-more units.

HIGH-SCHOOL ACHIEVEMENT

The highest coefficient of correlation was found between high-school grade-point averages and college grade-point averages. Is there a significant relationship between the choice of a senior college and the student's high-school grade-point average, and is this reinforced by his quartile rank in his high-school class?

The preference for a senior college in relationship to high-school grade-point average. A significant relationship between high-school grades and college preference is shown by Table XXVI. The brighter students, as determined by marks received, chose Chemistry and Physics in a better than two to one ratio for the observed frequency over the expected frequency. Students with perfect high-school averages also expressed preference for Medicine and Education at a high level and Arts and Sciences to a lesser degree.

Students with a "B" average in high school indicated Medicine, Chemistry and Physics, Education, and Engineering in greater than expected percentages. The "C" students were about as expected in each college preference, however, those preferring Agriculture, Law, Business Administration, Engineering, and Music had a higher percentage of their number with a low "C" average.

TABLE XXVI

SENIOR COLLEGE PREFERENCE AND HIGH-SCHOOL GRADE-POINT AVERAGE

College preference	1.00-1.49	1.50-1.99	2.00-2.49	2.50-2.99	3.00-3.49	3.50-3.99	4.0	Total
	Number of Students by Colleges and H.S. Grade-Point Average							
Agriculture	19 9.8%	42 10.4%	62 9.6%	49 8.2%	51 10.4%	19 6.0%	4 7.1%	246 9.1%
Arts and Sciences	55 28.4%	105 26.1%	155 24.0%	160 26.7%	111 22.6%	75 23.7%	15 26.8%	676 25.0%
Law	7 3.6%	13 3.2%	21 3.3%	15 2.2%	11 2.2%	9 2.8%	1 1.8%	77 2.8%
Medicine and Nursing	2 1.0%	18 4.5%	38 5.9%	43 7.2%	42 8.5%	25 7.9%	7 12.5%	175 6.5%
Business Administration	49 25.2%	67 16.6%	91 14.1%	71 11.8%	43 8.7%	18 5.7%	3 5.4%	342 12.6%
Chemistry and Physics	2 1.0%	2 0.5%	15 2.3%	21 2.3%	36 7.3%	33 10.44%	5 8.9%	114 4.2%
Education	17 8.7%	59 14.6%	102 15.8%	98 16.3%	85 17.3%	65 20.6%	13 23.2%	439 16.2%

TABLE XXVI (continued)

College preference	1.00-1.49	1.50-1.99	2.00-2.49	2.50-2.99	3.00-3.49	3.50-3.99	4.0	Total
	Number of Students by Colleges and H.S. Grade-Point Average							
Engineering	19 9.8%	54 13.4%	92 14.2%	78 13.0%	68 13.8%	46 14.6%	6 10.7%	363 13.4%
Music	2 1.0%	5 1.2%	6 0.9%	4 0.7%	4 0.8%	1 0.3%		22 0.8%
Undecided	22 11.3%	38 9.4%	63 9.8%	61 10.2%	41 8.3%	25 7.9%	2 3.6%	252 9.3%
Totals	194 100.0%	403 100.0%	645 100.0%	600 100.0%	492 100.0%	316 100.0%	56 100.0%	2706 100.0%
Per cent of total in each interval	7.2%	14.9%	23.8%	22.2%	18.2%	11.6%	2.1%	100.0%

X^2 = 173.125 df = 54

F = 3.21 F at .01 level = 1.79

The greatest divergence between the observed frequency and the expected frequency among the "D" pupils was in preference for Business Administration.

Table XI shows that 161 students with high-school grade-point averages of "D" were successful in college grades for their first year. It would be profitable to study those students who succeeded in college but who were low achievers in high-school in terms of their senior college preference.

Senior college preference and the student's quartile rank. Results of this analysis and that preceding might be expected to be roughly the same. This seems to be borne out in Table XXVII. Those students who were in the top one-fourth of their class exceeded the expected frequencies in the colleges of Medicine, Chemistry and Physics, Education, and Engineering. The third quartile indicated a preference in greater than expected numbers for Agriculture, Law, Medicine, and Business Administration. Those in the lowest quartile indicated in greater numbers than that expected preference for the colleges of Agriculture, Arts and Sciences, Law and Business Administration.

TABLE XXVII

SENIOR COLLEGE PREFERENCE AND QUARTILE RANK IN HIGH SCHOOL GRADUATING CLASS

College preference	Highest Fourth quartile	Third quartile	Second quartile	Lowest First quartile	Total
	Number of Students by Colleges and Quartile Rank in H.S.				
Agriculture	92 8.9%	54 10.0%	23 9.6%	18 10.3%	187 9.4%
Arts and Sciences	249 24.0%	130 24.2%	65 27.0%	54 30.9%	498 25.0%
Law	28 2.7%	17 3.2%	3 1.2%	6 3.4%	54 2.7%
Medicine and Nursing	77 7.4%	41 7.6%	14 5.8%	6 3.4%	138 6.9%
Business Adminis-tration	88 8.5%	69 12.8%	44 18.3%	36 20.6%	237 11.9%
Chemistry and Physics	74 7.1%	17 3.2%	2 0.8%	2 1.1%	95 4.8%
Education	180 17.4%	84 15.6%	31 12.9%	16 9.1%	311 15.6%
Engineering	158 15.3%	73 13.6%	36 14.9%	17 9.7%	284 14.3%
Music	7 0.7%	6 1.1%	2 0.8%	1 0.6%	16 0.8%
Undecided	83 8.0%	47 8.7%	21 8.7%	19 10.9%	170 8.5%
Total	1036 100.0%	538 100.0%	241 100.0%	175 100.0%	1990 100.0%

TABLE XXVII (continued)

College preference	Highest Fourth quartile	Third quartile	Second quartile	Lowest First quartile	Total
	Number of Students by Colleges and Quartile Rank in H.S.				
Per cent of total in each interval	52.1%	27.0%	12.1%	8.8%	100.0%

X^2 = 82.280 df = 27
F = 3.05 F at .01 level = 1.79

COLLEGE PLACEMENT TEST SCORES

The School and College Abilities Test and stated preference for a senior college. There is a significant relationship between the scores made on the School and College Abilities Test and the student's stated preference for a senior college. This relationship is significant at the .01 level. Table XXVIII indicates that students with the higher scores tended to prefer the Colleges of Arts and Sciences, Medicine, Chemistry and Physics to an exceptionally high degree, Engineering, and Music. Those with lower scores tended to prefer Agriculture, Business Administration, and Education.

The Cooperative English Test scores and preference for a senior college. The scores received on the Cooperative English Test also show a significant relationship to preference for a senior college, significant at the .01 level of confidence. This relationship is shown in Table XXIX. Students with higher scores tended to prefer the colleges of Arts and Sciences, Medicine, and Chemistry and Physics in greater than expected numbers. Those with low scores preferred the colleges of Agriculture, Business Administration, and Music in greater than expected numbers.

TABLE XXVIII

SENIOR COLLEGE PREFERENCE AND SCORES ON SCHOOL AND COLLEGE ABILITIES TEST

College preference	Less than 280	280-294	295-309	310-324	More than 324	Total
	Number of Students by College and Scores on SCAT					
Agriculture	10 11.2%	85 12.9%	122 8.8%	25 5.0%	1 1.3%	243 9.0%
Arts and Sciences	19 21.3%	134 20.3%	331 24.0%	163 32.7%	22 28.9%	669 24.7%
Law	1 1.1%	15 2.3%	45 3.3%	14 2.8%	2 2.6%	77 2.9%
Medicine and Nursing	3 3.4%	34 5.2%	95 6.9%	39 7.8%	8 10.5%	179 6.6%
Business Adminis-tration	15 16.9%	105 15.9%	185 13.4%	40 8.0%	1 1.3%	346 12.8%
Chemistry and Physics	2 2.2%	11 1.7%	51 3.7%	31 6.2%	17 22.4%	112 4.1%
Education	25 28.1%	141 21.4%	226 16.4%	44 8.8%	4 5.3%	440 16.3%

TABLE XXVIII (continued)

College preference	Less than 280	280-294	295-309	310-324	More than 324	Total
	Number of Students by College and Scores on SCAT					
Engineering	2 2.2%	59 9.0%	205 14.8%	87 17.4%	14 18.4%	367 13.6%
Music		4 0.6%	8 0.6%	9 1.8%	2 2.6%	23 0.9%
Undecided	12 13.5%	71 10.8%	114 8.2%	47 9.4%	5 6.6%	249 9.2%
Total	89 100.0%	659 100.0%	1382 100.0%	499 100.0%	76 100.0%	2705 100.0%
Per cent of total in each interval	3.3%	24.4%	51.1%	18.4%	2.8%	100.0%

X^2 = 246.305 df = 36
F = 6.84 F at .01 level = 1.79

TABLE XXIX

SENIOR COLLEGE PREFERENCE AND SCORES ON THE COOPERATIVE ENGLISH TEST

College preference	Below 140	140-149	150-159	160-169	170 and above	Total
	Number of Students by Colleges and Cooperative English Test Scores					
Agriculture	2 6.5%	38 11.4%	109 11.4%	87 8.1%	9 2.8%	245 9.0%
Arts and Sciences	4 12.9%	66 19.9%	197 20.6%	282 26.1%	122 27.9%	671 24.7%
Law	1 3.2%	7 2.1%	29 3.0%	32 3.0%	8 2.5%	77 2.8%
Medicine and Nursing	2 6.5%	17 5.1%	50 5.2%	83 7.7%	27 8.4%	179 6.6%
Business Administration	8 25.8%	63 18.9%	153 16.0%	108 10.0%	15 4.7%	347 12.8%
Chemistry and Physics		5 1.5%	28 2.9%	48 4.4%	34 10.6%	115 4.2%
Education	6 19.4%	51 15.3%	159 16.6%	183 17.0%	43 13.4%	442 16.2%

TABLE XXIX (continued)

College preference	Below 140	140-149	150-159	160-169	170 and above	Total
	Number of Students by Colleges and Cooperative English Test Scores					
Engineering	3 9.7%	43 12.9%	146 15.3%	143 13.3%	36 11.2%	371 13.6%
Music	1 3.2%	4 1.2%	10 1.0%	6 0.6%	2 0.6%	23 0.8%
Undecided	4 12.9%	39 11.7%	75 7.8%	107 9.9%	26 9.0%	951 9.2%
Total	31 100.0%	333 100.0%	956 100.0%	1079 100.0%	322 100.0%	2721 100.0%
Per cent of total in each interval	1.1%	12.2%	35.1%	39.7%	11.8%	100.0%

X^2 = 169.627 df = 36
F = 4.71 F at .01 level = 1.79

Scores on Cooperative Mathematics Test and preference for a senior college. There is a significant relationship between scores made on the Cooperative Mathematics Test and the student's expressed preference for a senior college as shown by Table XXX. These scores indicate that the more able mathematics students expect to enter the senior colleges of Arts and Sciences, Chemistry and Physics, and Engineering in a much greater than the normally expected ratio. In the middle range of scores the expected frequency and the observed frequency were approximately the same.

Generally those scoring less than 24 points indicated a preference for the colleges of Agriculture, Business Administration, Education, and Music. However eight students expected to major in Chemistry and Physics whose scores on the mathematics placement test were so low they were ineligible to take freshman chemistry their first semester.

SEX OF THE STUDENT

The preference for a senior college and the sex of the student. This relationship is significant and bears out what traditionally has been known. Table XXXI shows that the significant differences are largely in those fields of endeavor generally regarded as being filled by men or by women.

TABLE XXX

SENIOR COLLEGE PREFERENCE AND SCORES ON COOPERATIVE MATHEMATICS TEST

College preference	0-5	6-11	12-17	18-23	24-29	30-35	36-up	To-tal
	Number of Students by Colleges and Cooperative Mathematics Test Scores							
Agriculture	2 15.7%	20 12.0%	47 13.2%	51 11.4%	71 11.6%	38 5.4%	17 4.1%	246 9.1%
Arts and Sciences	1 7.7%	39 23.3%	87 25.7%	115 25.7%	141 23.1%	167 23.9%	120 28.8%	670 24.7%
Law		6 3.5%	7 2.0%	9 2.0%	16 2.5%	28 4.0%	10 2.4%	76 2.8%
Medicine and Nursing	1 7.7%	4 2.4%	12 3.4%	27 6.0%	39 6.4%	67 9.6%	28 6.7%	178 6.6%
Business Adminis-tration	2 15.4%	32 19.3%	60 16.9%	55 12.3%	83 13.6%	83 11.9%	30 7.2%	345 12.7%

TABLE XXX (continued)

College preference	0-5	6-11	12-17	18-23	24-29	30-35	36-up	Total
	Number of Students by Colleges and Cooperative Mathematics Test Scores							
Chemistry and Physics		2 1.2%	3 0.8%	9 2.0%	23 3.8%	36 5.2%	43 10.3%	116 4.3%
Education	5 38.5%	39 23.3%	82 23.0%	100 22.3%	99 16.2%	78 11.2%	30 7.2%	433 16.0%
Engineering		3 1.8%	18 5.1%	34 7.6%	78 12.8%	132 18.9%	108 25.9%	373 13.8%
Music		2 1.2%	8 2.2%	3 0.7%	4 0.7%	5 0.7%	1 0.2%	23 0.8%
Undecided	2 15.4%	20 12.0%	32 9.0%	45 10.0%	56 9.2%	64 9.2%	30 7.2%	249 9.2%
Total	13 100.0%	167 100.0%	356 100.0%	448 100.0%	610 100.0%	698 100.0%	417 100.0%	2709 100.0%
Per cent of total in each interval	0.5%	6.2%	13.1%	16.5%	22.5%	25.8%	15.4%	100.0%
X^2 = 2250.812							df = 54	
F = 41.68						F at .01 level = 1.79		

TABLE XXXI

SENIOR COLLEGE PREFERENCE
AND SEX OF STUDENT

College preference	Male	Female	Total
	Number of Students by Colleges and Sex of Student		
Agriculture	146	104	250
	9.0%	9.1%	9.1%
Arts and Sciences	348	331	679
	21.4%	29.0%	24.5%
Law	69	8	77
	4.2%	0.7%	2.8%
Medicine and Nursing	132	52	184
	8.1%	4.6%	6.7%
Business Administration	265	83	348
	16.3%	7.3%	12.6%
Chemistry and Physics	59	59	118
	3.6%	5.2%	4.3%
Education	78	371	449
	4.8%	32.5%	16.2%
Engineering	369	9	378
	22.7%	0.8%	13.7%
Music	13	10	23
	0.8%	0.9%	0.8%
Undecided	147	113	260
	9.0%	9.9%	9.4%
Total	1626	1140	2766
	100.0%	100.0%	100.0%
Per cent of total in each interval	58.8%	41.2%	100.0%

$X^2 = 659.640$ df = 9
F = 73.29 F at .01 level = 2.34

The colleges of Law, Medicine, Business Administration, and Engineering are traditionally regarded as a man's world. Education is generally thought of as an area for women; but no school was without a number of both sexes, even Engineering. Perhaps somewhat surprising is the fact that a greater percentage of women chose Chemistry and Physics than did the men.

ENVIRONMENTAL FACTORS

Does the level of the parent's education affect the student's preference for a field of work? Does the size of the school one attends make a significant difference in the choice of occupation? This section analyzes these two factors.

The formal education of the parent and its relationship to preference for a senior college. The amount of formal education of a parent makes a significant difference in the college choice of the offspring. Table XXXII presents these data. The difference is significant at the .01 level of confidence.

Those students choosing Agriculture exceed the expected frequency if parents have no college education or if they held advanced college degrees. On the other hand, they fall below the expected number if the parent had some college or a bachelor's degree.

TABLE XXXII

SENIOR COLLEGE PREFERENCE AND THE FORMAL EDUCATION OF A PARENT*

College preference	Less than high school graduation	High school graduate	Some college	College graduate	Master's or Law	Doctorate Medicine	Total
	Number of Students by College and Education of Parents						
Agriculture	39 9.4%	85 11.10	37 6.9%	51 7.4%	23 9.7%	15 11.0%	250 9.0%
Arts and Sciences	72 17.4%	168 22.0%	150 28.0%	174 25.4%	66 28.0%	50 36.8%	680 24.6%
Law	13 3.1%	13 1.7%	15 2.8%	20 2.9%	11 4.7%	5 3.7%	77 2.8%
Medicine and Nursing	21 5.0%	38 5.0%	50 9.3%	43 6.3%	15 6.4%	17 12.5%	184 6.6%
Business Administration	68 16.4%	98 12.8%	79 14.8%	76 11.1%	23 9.7%	5 3.7%	349 12.6%
Chemistry and Physics	15 3.6%	29 3.8%	23 4.3%	38 5.5%	8 3.4%	6 4.4%	119 4.2%
Education	77 18.6%	102 13.4%	92 17.2%	118 17.2%	44 18.6%	16 11.8%	449 16.2%

TABLE XXXII (continued)

College preference	Less than high school graduation	High school graduate	Some college	College graduate	Master's or law	Doctorate medicine	To-tal
Engineering	63 15.2%	142 18.6%	41 7.7%	97 14.2	28 11.9%	7 5.1%	378 13.7%
Music	2 0.5%	9 1.2%	4 0.7%	7 1.0%		1 0.7%	23 0.8%
Undecided	44 10.6%	79 10.4%	44 8.2%	61 8.9%	18 7.6%	14 10.3%	260 9.4%
Totals	414 100.0%	763 100.0%	535 100.0%	685 100.0%	236 100.0%	136 100.0	2769 100.0%
Per cent of total in each interval	15.0%	27.6%	19.3%	24.7%	8.5%	4.9%	100.0%

X^2 = 130.875 df = 45
F = 2.91 F at .01 level = 1.79

*The parent with the highest attained level of education.

These students who indicated a preference for Arts and Sciences exceed the expected frequency if the parent attended college but fell below the expected frequency if the parent did not attend college.

Those preferring the School of Law present no particular pattern, but the expected frequency is exceeded in all categories except that of parents who graduated from high school. Those indicating Medicine as a preference exceed the expected frequency by a considerable number if the parents attended college but did not graduate, or if a parent was a doctor.

Children from families in which the parents have little formal education, or in which they dropped out of college, chose Business Administration in numbers larger than expected on a percentage basis. If the parent was a high school graduate, the student preferred Engineering at the highest rate.

Students choosing Chemistry and Physics ranked unusually high academically and seem to come from all levels of formal education of the parent. Students choosing Education exceeded the expected frequency in all intervals except that of parents who were high-school graduates and parents with doctorates.

The size of the high-school graduating class and student's preference for a senior college. The size of the student's graduating class has a relationship to his choice of a senior college significant at the .01 level of confidence. Table XXXIII contains data for this analysis.

Graduates from the small high school, in greater than expected frequency, showed a preference for the College of Agriculture. The size of the high school seems to make relatively little difference for those who expected to enter Arts and Sciences. The percentage preferring Law is significantly greater than the expected among those from schools with a graduating class of 300 to 399 students. Those from schools with less than 200 in the graduating class chose Medicine more frequently. Business Administration was preferred at the highest rate among students whose graduating classes were of 200-399 size. This group also chose Chemistry and Physics at the highest rate. Education is preferred by greater numbers of students graduating from the largest high schools but Engineers will be products of smaller schools, if college preference was an indication.

There is no definite pattern among those whose preference is unstated. Among the few students preferring Music, those whose graduating class had 100 to 199 members exceeded the expected frequency.

TABLE XXXIII

SENIOR COLLEGE PREFERENCE AND THE SIZE OF THE HIGH-SCHOOL GRADUATING CLASS

College preference	1-99	100-199	200-299	300-399	400 and Over	Total
	Number of Students by Colleges and Size of H.S. Class					
Agriculture	121 12.8%	46 8.2%	10 4.4%	16 5.4%	42 7.6%	235 9.1%
Arts and Sciences	230 24.4%	135 24.1%	61 26.8%	67 22.8%	153 27.6%	646 25.0%
Law	24 2.5%	15 2.7%	7 2.1%	12 4.1%	12 2.2%	70 2.7%
Medicine and Nursing	72 7.6%	45 8.0%	10 4.4%	16 5.4%	28 5.0%	171 6.6%
Business Administration	85 9.1%	61 10.9%	41 18.0%	50 17.0%	82 14.8%	319 12.4%
Chemistry and Physics	43 4.6%	21 3.7%	15 6.6%	15 5.1%	17 3.1%	111 4.3%
Education	145 15.4%	88 15.7%	28 12.3%	52 17.7%	106 19.1%	419 16.2%
Engineering	136 14.4%	92 16.4%	40 17.5%	26 8.8%	66 11.9%	360 14.0%
Music	4 0.4%	7 1.2%	2 0.9%	2 0.7%	5 0.9%	20 0.8%
Undecided	82 8.7%	51 9.1%	14 6.1%	38 12.9%	44 7.9%	229 8.9%
Totals	942 100.0%	561 100.0%	228 100.0%	294 100.0%	555 100.0%	2580 100.0%

TABLE XXXIII (continued)

College preference	1-99	100-199	200-299	300-399	400 and Over	Total
	Number of Students by Colleges and Size of H.S. Class					
Per cent of total in each interval	36.5%	21.7%	8.8%	11.4%	21.5%	100.0%

X^2 = 97.179 df = 36

F = 2.42 F at .01 level = 1.79

CHAPTER VI

SUMMARY AND CONCLUSIONS

I. SUMMARY

This study shows how one entering class of college freshmen, 2775 students, progressed in and through the Junior Division of the Louisiana State University. What were some characteristics of this class?

PROFILE OF THE 1963-64 FRESHMAN CLASS

High-school grades and curriculum background. This class had a strong "C" average on their high-school work. More than 50 per cent were in the top fourth of their high-school graduating classes and less than 25 per cent ranked in the bottom half.

This class had more students with a non-academic curriculum background than with the traditional college-preparatory curriculum. Yet in terms of the traditional college-preparatory curriculum the class was fairly well qualified. In English 95 per cent had the basic four units; in mathematics 75.9 per cent had three or more college-preparatory courses; in science 72.6 per cent had two or more units, not including general science, and 23.5 per

cent had studied science in each of the four high-school years. There were 54.5 per cent who had more than two units each in foreign language and in social studies, while fewer than 30 per cent had no credit in foreign language.

College placement test scores. On the placement tests the class scored as follows: On the School and College Abilities Test the mean score was 299 in a possible range of 250 to 350. There were 3.4 per cent with scores below 180 and 2.7 per cent with scores above 325. Based on Cooperative English Test scores, approximately 20 per cent of the class were placed in the remedial English course, approximately 60 per cent in regular English, while 20 per cent were given advanced placement in English. On the Cooperative Mathematics Test the average score was 25.6 in a possible range from zero to 40. A score of 25 was required for assignment to the regular first-year college mathematics. All below this score were assigned to remedial mathematics, approximately 45 per cent of the class.

COLLEGE ACHIEVEMENT OF THE CLASS

The grade-point averages. The average of the class for the fall semester was 1.132, a "C" average. On all courses taken during the freshman year the grade-point average for the entire group was 1.015.

Categories of achievement. According to the categories of achievement used in this study the class ranged as follows: 1069 (38.5 per cent) progressed through and out of the Junior Division in the normal time; another 18.5 per cent failed to complete the Junior Division on schedule but were not on probation; and another 13.5 per cent of the total class were on probabion but eligible to continue; 423 students (15.2 per cent) failed out at the end of the first semester and an additional 5.9 per cent failed out at the close of their second semester. Students who dropped out comprised 8.4 per cent of the total who began college in this class. The latter came from all types of backgrounds and had all degrees of potential. In summary, 57 per cent succeeded in the first year in college in that they were eligible to continue in good standing; 13.5 per cent were continued but on probation; and 21.1 per cent were dropped because of poor achievement. The others dropped for largely personal reasons.

Achievement of freshmen with less than "C" average in high school. If the University had required a "C" average in high-school work for admission, 598 of this class would have been denied admission. Of these, 161 were in good standing at the end of the year; and another 107 were

eligible to continue, though on probation. This was 44.8 per cent of those with less than a "C" average in high school. Thus students with a high-school average below "C" had a somewhat less than fifty-fifty chance of succeeding in college.

Achievement of high-school honor roll students. There were 869 students in this freshman class who had maintained a "B" or better average in high school. Only 4 per cent of these failed. Certainly the odds favor those with good high-school marks.

Placement test scores and achievement. Results of placement tests administered to beginning college students have a significant relationship to achievement. Generally the higher the score the greater the college success. These tests are primarily placement tests and placement in college courses of varying levels enables many students to achieve success in college.

THE RELATIONSHIP OF COLLEGE ACHIEVEMENT TO THE FACTORS INCLUDED IN THIS STUDY

Each factor is presented in some detail and the significance of difference determined through the X^2 and F values with the null hypothesis rejected at the .05 level of confidence. In all but one of the factors considered, however,

the difference was significant at the .01 level of confidence.

Sex of the student. Females achieved better than male students; twice the proportion of males failed the first semester. Females, however, resigned in a greater proportion.

High-school English. Students who had taken only three units of high-school English failed or dropped out of college at a rate greater than 50 per cent. In this group, however, 27 per cent were successful. About 28 per cent of those with four or more units failed or dropped out. The addition of speech and/or journalism courses had little effect on achievement.

High-school mathematics. Students with minimum requirements in mathematics for high-school graduation failed out of college at a rate of over 50 per cent; those with two units of college-preparatory mathematics failed out at a rate of about 30 per cent; approximately 21 per cent of those with three units failed; and about 11 per cent of those with four units failed. Those with minimum requirements attained sophomore standing at a rate of 7 per cent while those with maximum units attained this rank at a rate of 52 per cent.

High-school science. Those with three units of science, not considering general science, had the best achievement. It would appear that general science adds little to chances of successful achievement, as students with two units of high-school science without general science exceeded the achievement of those with three units including general science.

Other high-school credits. A background of the college-preparatory courses appears to increase the chances of success as 70 per cent of this group achieved this level compared with 47 per cent in the non-college-preparatory group. The latter failed at the rate of 31 per cent, while of the former only 11 per cent failed. The percentage of failures increased as the number of high-school vocational credits increased.

Quartile rank in graduating class. Eighty per cent of the class had graduated in the top half of their high-school class and two-thirds of these were in the highest quartile. Students from outside Louisiana must rank in the top half of their high-school class to gain admission to the University. Thus students ranking in the bottom half of their classes were largely graduates of Louisiana schools. Of these about 37 per cent failed compared to 11 per cent of those in the top half. About 34 per cent of students in

the bottom half of high-school class had success in college compared with 58 per cent from the top half.

Size of the high-school class. The only factor not significant at the .01 level of confidence was that of class size. This factor did have a significant relationship at the .05 level. Over one-third of the 1963-64 freshmen were graduates of schools with classes of less than 100. About one-fifth were graduates of the largest size schools. But the largest percentages attaining success were from schools with a graduating class of 200-399.

Formal education of a parent. Those whose parents achieved success as college students also achieved success at a higher rate.

THE RELATIONSHIP OF THE FACTORS AND THE PREFERENCE FOR A SENIOR COLLEGE

Each of the fourteen factors considered in this part of the study had a significant relationship to the student's preference for a senior college at the University. No consideration was had for the student's success or lack of success in his high-school subjects except in grade-point average.

The high-school background. In general students who would be considered the top group wished to enter, in greater than expected percentages, the colleges of Medicine, Chemistry and Physics, and Engineering. Students who indicated a preference for Education ranked among the top on grades received in high school but at a lower level in other factors.

Students who were undecided about their preference for a senior college were as likely to have exceptionally good qualifications as poor ones. Few patterns emerged.

The placement test scores. There appeared to be a slight tendency for students with low scores on the placement tests to be more undecided about their preference for a senior college.

Sex of the student. The sex of the freshman had a significant relationship to the senior college preference.

Formal education of a parent. This factor has a significant relationship to student's preference for a senior college. The pattern is rather variable. Those preferring Engineering had an expected frequency which exceeded the observed frequency to a rather large degree if they were children of parents with only a high-school education or less.

The size of the high-school class. The size of the high-school class relates to the preference for future study to a limited extent. There is no well defined pattern for the areas of study. However, the intervals chosen are large and many Louisiana high schools have smaller graduating classes than one hundred members.

II. CONCLUSIONS

That there are exceptions to every rule is borne out in this study. The odds definitely favor certain aspects of background study and highly favor a good academic curriculum in high school. Yet there are too many students who have achieved success in their first college work to risk shutting them out by arbitrary methods of selecting students, regardless of criteria used.

Members of this freshman class appeared to be choosing their future field of study in terms of their abilities and background of academic preparation. There are no data to indicate that those expressing a preference for one college have a decided advantage over those desiring another.

III. RECOMMENDATIONS

Further study is recommended in two areas. (1) A study comparing and contrasting size of schools in conjunction with quartile rank and their joint relationship to

achievement may be of value. (2) A high percentage of students fail college mathematics even though many are in remedial sections. A majority of these students had a supposedly good preparation in high-school mathematics. A detailed study of the student's mathematical background including curriculum, marks, size of school, and qualifications of high-school teachers may provide useful data, especially in light of the somewhat higher correlation with college achievement than other specific factors considered.

BIBLIOGRAPHY

BIBLIOGRAPHY

A. BOOKS

Bertowitz, David S. Inequality of Opportunity in Higher Education. Albany, N.Y.: Williams Press, Inc., 1948. 203 pp.

Chamberlin, Dean, et al. Did They Succeed in College? New York: Harper and Brothers, 1942. 291 pp.

Douglass, Harl R. The Relation of High School Preparation and Certain Other Factors to Academic Success at the University of Oregon. Eugene: University Press, 1931. 61 pp.

Fine, Benjamin. Admission to American Colleges, A Study of Current Policy and Practice. New York: Harper and Brothers, 1946. 225 pp.

Garrett, Henry E. Statistics in Psychology and Education. New York: Longmans, Green and Company, Fifth Edition, 1958. 478 pp.

Hollinshead, B. S. Who Should Go To College? New York: Columbia University Press, 1952. 190 pp.

Rubinfield, William A. What You Must Know About Getting into College. New York: Universal Publishing and Distributing Corporation, 1964. 160 pp.

B. PUBLICATIONS OF LEARNED SOCIETIES AND OTHER ORGANIZATIONS

Bowles, Frank H., "Admissions to College: A Perspective for the 1960s," 57th Report of the President, College Entrance Examination Board. Princeton, N.J., 1960. 144 pp.

Davis, Frederick B. Utilizing Human Talent. Washington: American Council on Education, 1947. 85 pp.

Introducing L.S.U. Baton Rouge: Registrar's Office, Louisiana State University, 1964.

Lins, L. J. Methodology of Enrollment Projections for Colleges and Universities. New York: The American Association of Collegiate Registrars and Admissions Offices, 1960.

Louisiana State University General Catalogue, 1963-1965.

Teagle, Raphiel, et al. Handbook for School Administrators. Baton Rouge: State Department of Education, 1953.

C. PERIODICALS

Crossland, Fred, et al. "Problems and Issues in College Admissions," Phi Delta Kappan, 46:297-339, March, 1965.

Education U.S.A. Washington: National Education Association, January 7, 1965, p. 75.

Phi Delta Kappan, 46:210, January, 1965.

D. UNPUBLISHED MATERIALS

Adams, Sam. "A Study of Various Factors Related to Success in College Physics." Unpublished Doctoral dissertation, Louisiana State University, Baton Rouge, 1951.

Agate, Grace B. "Persistence in College as Related to Intelligence, Economic Background, and Present Occupation." Unpublished Doctoral dissertation, Louisiana State University, Baton Rouge, 1941.

Beyer, William F. "A Study of the Performance of High School Biology Students in Basic College Biology." Unpublished Doctoral dissertation, Louisiana State University, Baton Rouge, 1952.

Hanks, Charles J. "A Comparative Study of Factors Related to Retention and Withdrawal of Freshmen Students at the University of Arkansas." Unpublished Doctoral dissertation, University of Arkansas, Fayetteville, 1954.

Lawrence, W. A. "An Evaluation of Achievement in the Various Colleges of the Louisiana State University with Special Reference to Certain Aspects of the Junior Division." Unpublished Doctoral dissertation, Louisiana State University, Baton Rouge, 1940.

Lawrence, W. A. "A Study of High School Standing in Relation to Achievement in College." Unpublished Master's thesis, Louisiana State University, Baton Rouge, 1929.

McElwee, Tandy W. "A Comparison of the Scholastic Achievement of the Transfer Students with that of Students Who Enter L.S.U. as Freshmen." Unpublished Doctoral dissertation, Louisiana State University, Baton Rouge, 1952.

Patton, Ben K. Jr. "A Study of Drop-outs from the Junior Division of Louisiana State University, 1953-1958." Unpublished Doctoral dissertation, Louisiana State University, Baton Rouge, 1958.

Russell, James Ward. "A Comparison of Michigan State College Drop-outs and Non-drop-outs According to Certain Factors." Unpublished Doctoral dissertation, Michigan State University, Lansing, 1952.

Suk, Kim K. "The Use of Certain Measurements of Academic Aptitude, Study Habits, Motivation, and Personality in the Prediction of Academic Achievement." Unpublished Doctoral dissertation, Louisiana State University, Baton Rouge, 1959.

D. NEWSPAPERS

Baton Rouge Morning Advocate, February 6, 1965.

Baton Rouge Morning Advocate, October 11, 1964.

Baton Rouge Morning Advocate, October 18, 1964.

Baton Rouge State Times, July 22, 1964.

Louisiana State University Summer Reveille, June 23, 1964.

BIOGRAPHY

Joe Watkins Campbell was born March 13, 1922 in West Point, Mississippi. He received his early education in that city graduating from West Point High School in 1939. In the fall of 1939 he entered Jones County Junior College, Ellisville, Mississippi later transferring to Louisiana College where he received the B.S. degree in 1943. In 1949 he received the M.Ed. degree from Louisiana State University.

At the present time Campbell is principal of the L. S. Rugg Elementary School, Alexandria, Louisiana, having been in this position for the past eleven years. Prior to this he taught science and mathematics and coached athletic teams at the Homer High School, Claiborne Parish; Brusley High School, West Baton Rouge Parish; Oak Grove High School, West Carroll Parish; and Bolton High School, Rapides Parish, Louisiana. He is active in several professional organizations and has served as Vice-president of the National Department of Elementary School Principals of the National Education Association.

He served in the United States Navy during World War II.

Campbell is married to the former Junee Stickley of Pineville, Louisiana and they have four children.

EXAMINATION AND THESIS REPORT

Candidate: Joe Watkins Campbell

Major Field: Education

Title of Thesis: Factors Related to Achievement (Louisiana State University Freshman Class, 1963-64)

Approved:

George N. Dean
Major Professor and Chairman

Max Goodrich
Dean of the Graduate School

EXAMINING COMMITTEE:

Rodney Cline

Sam Adams

Lucius V. Berg

O E Shipp

Thomas R. Sanders

W. R. Eglin

Date of Examination:

June 21, 1965